SERVICE ADJUSTMENTS WHICH MUST BE MADE WITH RC HAND UNIT

SERVICE MODE

Before making adjustments with RC hand unit, make sure the supply voltage is correctly adjusted (see service adjustments on power supply/horizontal deflection unit).

Number buttons of the hand unit are used for service adjustments when the set is in the service mode. Analog controls function normally; teletext controls and other special controls don't function.
TV receiver is set to the service mode by pressing quickly one norm button N1, N2 or N3 (or P/C button on the hand unit) and within 8 seconds the service switch located in the local control unit (see figure). In the service mode the display shows one indicator led illuminating and other segments are off. You can get back to normal TV mode by pressing the service switch again. It is possible to get to the service mode only from TV mode.
Remote control commands in the service mode are as follows:
- With number buttons you can give a two numbered code which determines the adjustment (e.g. 27=picture height).
- The adjustment is then made by pressing STEP+ and STEP- buttons.
- The adjusted value is stored to the NVM by pressing -/-- button. You must store each function separately. The value of the adjustment range is 00...31 for vertical and horizontal compensation and 00...63 for other adjustments.
- The version number of the NVM can be asked by pressing P/C button. It is shown in hexadecimal form (e.g. "02" = 2k memory, "01" = 1k memory).

CONFIGURATION AND FAULT DIAGNOSIS FOR CIRCUITS CONNECTED TO THE IIC-BUS

By pressing 04 in the service mode, the processor checks all possible addresses of bus driven circuits and shows the address of the circuit if found for about one second. After checking all the circuits, the display shows 04 again.
The set must be configurated after adding or removing some options eg:
- adding or changing the teletext module
- adding the inner satellite unit
- changing the scart unit (copy function)

The configuration of the set is stored in the NVM by pressing -/-- button. The set takes the new configuration in use only after reseting the set with the mains switch. The configuration serves also as a fault diagnosis system.

In table 1 is shown the remarks for the adjustments.
In table 2 is shown two numbered codes for adjustments. If you choose the code which is not defined, the display will show the previous code again.
If all adjustments must be made, follow the order in table 2.
NB! Horizontal linearity is adjusted with Lz5.
In table 3 is shown the display codes during configuration in the sequence the microprocessor checks them.
NB!There is an adjustment for vertical and horizontal shift (codes 30 and 38) both in 50Hz and 60Hz systems. While adjusting you must have the right transmission.

TABLE 1

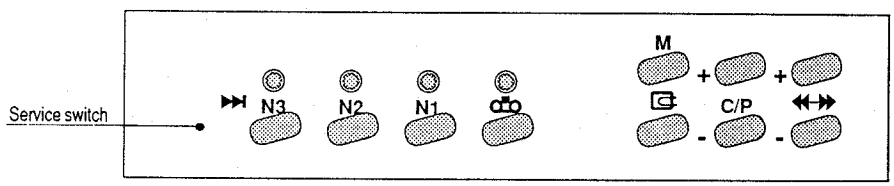
Adjustment	Code	Remarks
R and G gain	22 and 23	Adjust white area of test picture to white.
Line frequency	25	Connect test point 39 to the ground before adjustment.
Picture height and vert. comp.	27 and 31	Set brightness and contrast to 20% and adjust the picture height (code 27). Press memory button (-/--). Set brightness and contrast to 90 % and compensate the change in picture height (code 31). Press memory button (-/--).
Picture width and hor. comp.	32 and 36	Set brightness and contrast to 20% and adjust the picture width (code 32). Press memory button (-/--). Set brightness and contrast to 90% and compensate the change in picture width (code 36). Press memory button (-/--).

TABLE 2

Adjustment	Code
Line frequency	25
Vertical shift/50Hz	30
Vertical shift/60Hz	38
Picture height	27
Vertical compensation	31
Vertical linearity	28
Hor. phase shift	26
Picture width	32
Hor. compensation	36
Trapez correction	35
S-correction	29
E-W corner correction	34
E-W raster correction	33
R gain	22
G gain	23

TABLE 3

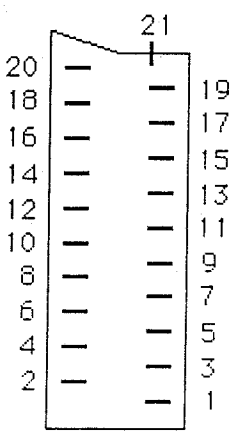
06	Satellite processor
04	Teletext processor (high feature)
22	CCT basic teletext (ICt2)
d2	RGB-switch (ICe1)
94	Extra videoswitch (only in monitor)
92	Copy switch (ICI2)
90	Scart switch (ICI1)
80	Sound adjustment circuit (ICd1)
84	Stereo identification circuit (ICd2)
48	Driver of the decoder (ICe2)
8C	Sync processor (ICh2)
C2	PLL (ICi1)
A2	NVM of teletext (ICt5)
A0	NVM of TV (ICf1)
Pn	Picture memory n kilobyte
An	Antiope text



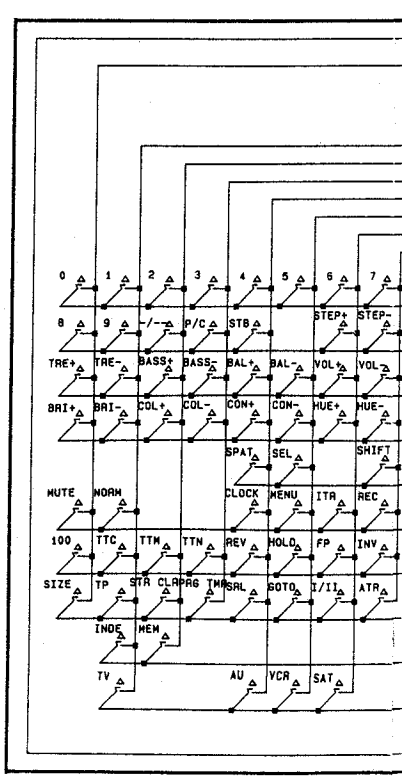
SCART EUROCONNECTOR

Contact number	Signal	Matching value
1	Audio output	0,5V/1kohm
2	Audio input	0,5V/10kohm
3	Audio ouput	0,5V/1kohm
4	Audio ground	-
5	Blue ground	-
6	Audio input	0,5V/10kohm
7	Blue input	0,7V/75ohm, positive going signal
8	Function switching (TV/VCR) input	Logical zero: 0V to +0,4V Logical one: +9,5V to +12V
	RC-5 output	Open collector
9	Green ground	-
10	No connection permitted	-
11	Green input	0.7V/75ohm, positive going signal
12	No connection permitted	-
13	Red ground	-
14	RC-signal input	Min 6Vpp, max 12Vpp
15	Red input	0.7V/75ohm, positive going signal
16	Fast blanking input	Logical zero: 0V to +0,4V Logical one: +1V to +3V
17	Video ground	-
18	Fast blanking ground	-
19	Video output	1V/75ohm, positive going video
20	Video input Synchronization input	175ohm, positive going video 0,3Vpp/75ohm
21	Plug shield	Connected to chassis

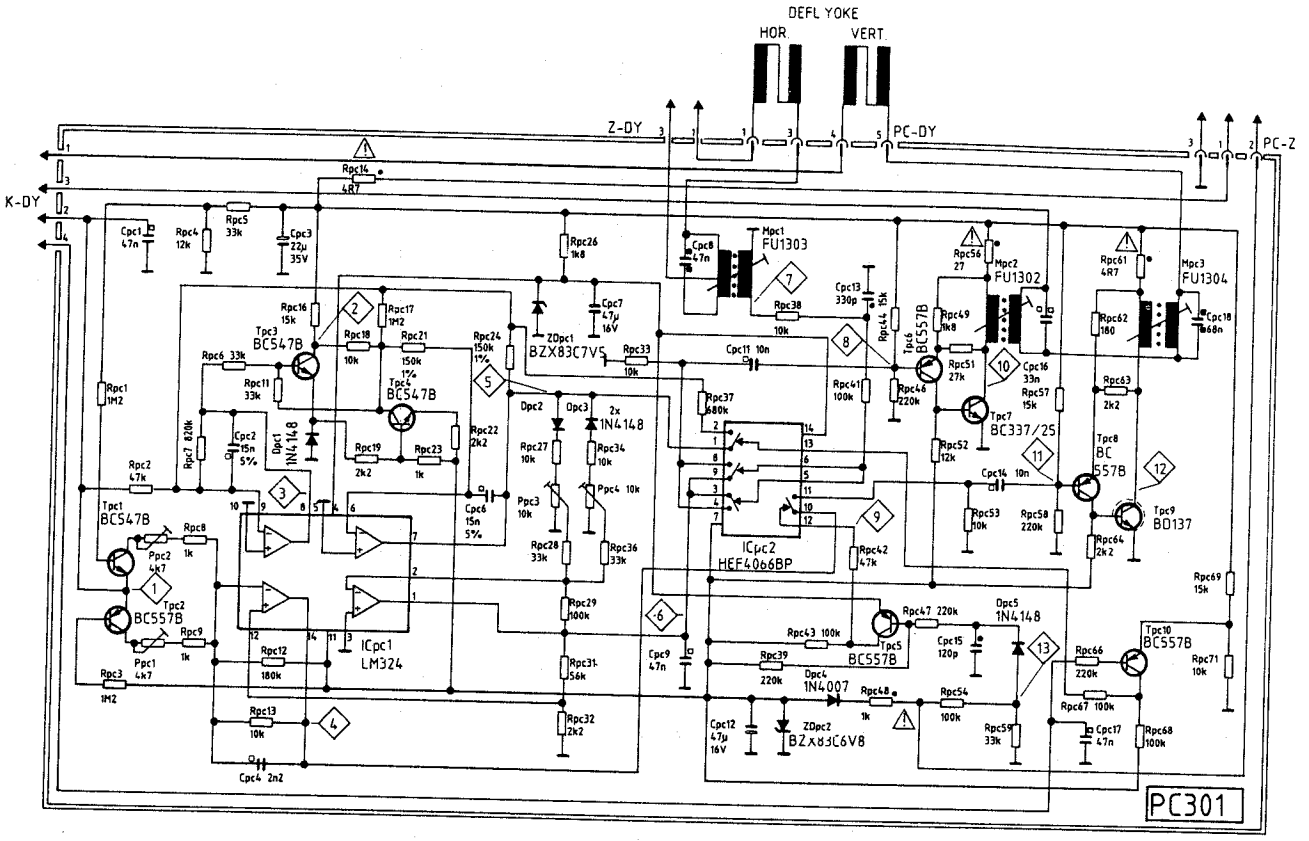
Euroconnector

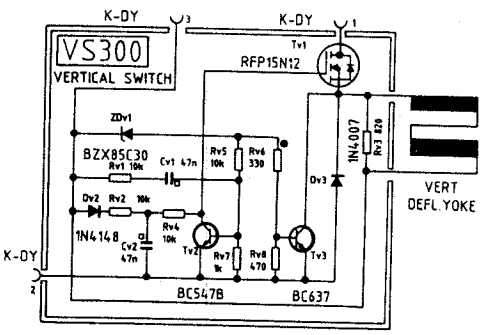


REMOTE CONTROL TRAN



RASTER CORRECTION MODULE PC301





RASTER CORRECTION MODULE PC301

SERVICE ADJUSTMENTS

The adjustments have to be made in the following order. Use cross hatch pattern.

PC1. Dynamic S-correction
Connect the oscilloscope to test point 7, and adjust the curve according to figure 1, with Mpc1.

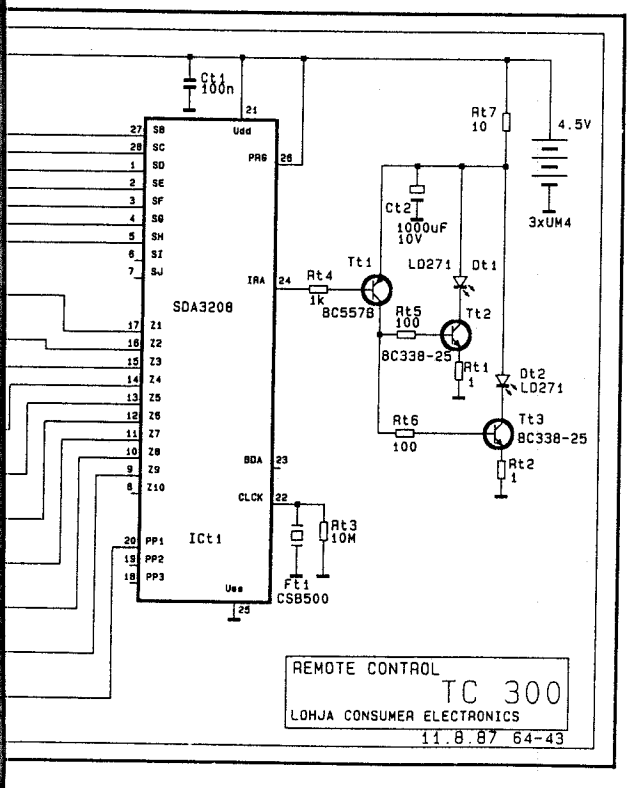
PC2. North-South phase correction
Turn Ppc1 fully clockwise viewed through the print side. Adjust Mpc3 until the bow of the pattern is horizontally in the middle of the screen.

PC3. North-South amplitude correction
Adjust the horizontal lines as straight as possible with Ppc1 and Ppc2.

PC4. Gullwing phase correction
Turn Ppc3 and Ppc4 to the middle position. Connect the oscilloscope to test points 7 and 10, and adjust the curves according to the figure 2, with Mpc2.

PC5. Gullwing amplitude correction
Adjust the horizontal lines as straight as possible with Ppc3 and Ppc4.

MITTER TC300



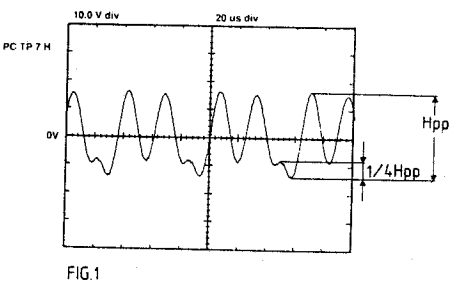


FIG.1

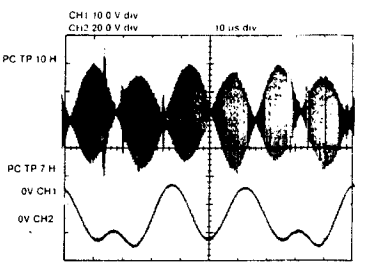


FIG 2

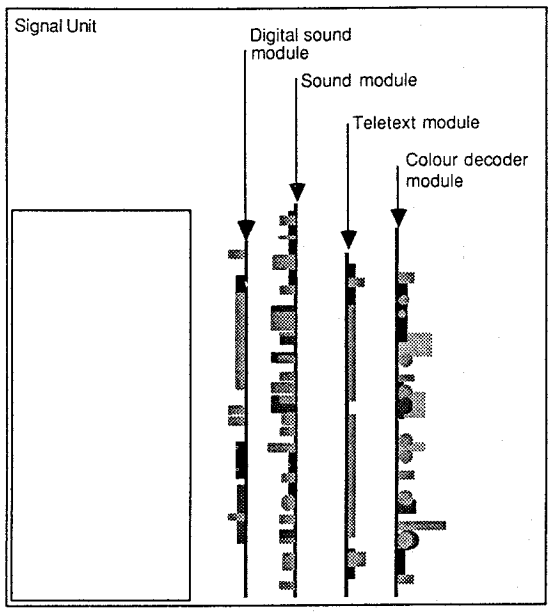
GB

MOUNTING INSTRUCTIONS OF THE TELETEXT MODULE

1. Mount the Teletext module into the teletext connectors of the Signal Unit (see fig.).

2. Switch the receiver on and set it to the service mode.

3. Start the configuration by pressing 04, store it in the NVM by pressing -/-- button and reset the set with the mains switch.



SDA 2060

CAAD	= Clock activated analog display
NPCLR	= No page clear in step function
FULLF	= Full field teletext reception is possible
APS1, APS0	= Advertising page select

APS1	APS0	
0	0	None
0	1	Quelle
1	0	Finlux
1	1	Asa

IPLB0, IPLB1, IPLB2 = Info page language bits

IPLB2	IPLB1	IPLB0	
0	0	0	Automatic selection through transmitted language bits
0	0	1	Italian info page
0	1	1	German info page
1	1	0	French info page
1	1	1	English info page

SAA 5231

STTV	= Sync output to TV
Osc out	= Oscillator output (6 MHz)
Osc in	= Oscillator input (6 MHz)
VID IN	= Composite video input
TTD	= Teletext data output
TTC	= Teletext clock output
F6	= 6 MHz clock output
VCS	= Video composite sync output
SAND	= Sandcastle input
$\overline{TCS}$	= Sync input

SAA 5241

$\overline{COR}$	= Contrast reduction
TTD	= Teletext data input
TTC	= Teletext clock input
F6	= 6 MHz clock input
VCS	= Video composite sync input
SAND	= Sandcastle output
$\overline{TCS/SCS}$	= Text composite sync/scan composite sync output
HOK	= Hamming O.K.
D0 - D7	= 8 RAM data lines
$\overline{OE}$	= Output enable
VCC	= Power supply
SCL	= Serial clock input
SDA	= Serial data
Y	= Character foreground
R	= Red output
B	= Blue output
G	= Green output
FB	= Blanking output
A10 - A12	= Chapter address output
A0 - A9	= RAM address output
$\overline{WE}$	= Write enable output

SAA 5231

STTV	= Sync output to TV
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SAA 5240

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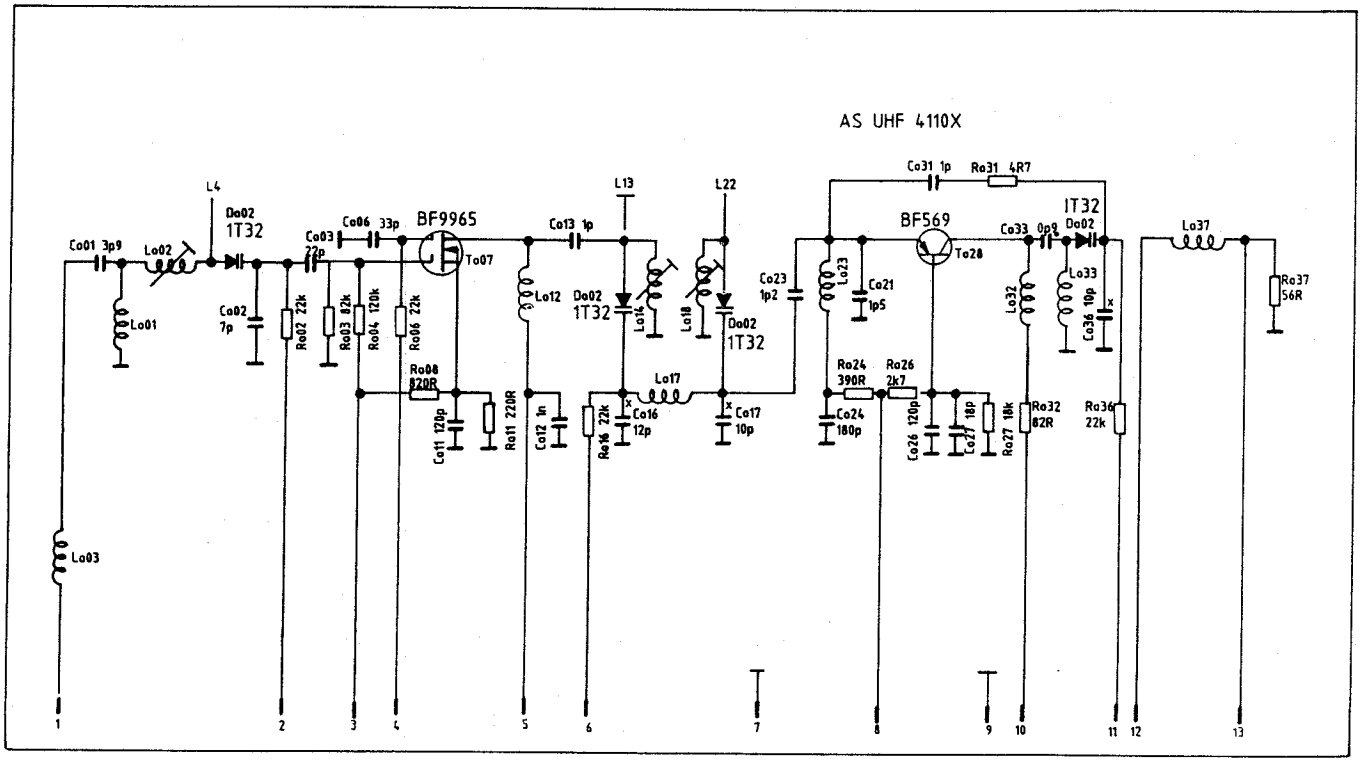
UHF SUBMODULE 4110



= Clock activated analog display
= No page clear in step function
= Full field teletext reception is possible
PS0 = Advertising page select

APS1	APS0	
0	0	None
0	1	Quelle
1	0	Finlux
1	1	Asa

LB1, = Info page language bits

IPLB2	IPLB1	IPLB0	
0	0	0	Automatic selection through transmitted language bits
0	0	1	Italian info page
0	1	1	German info page
1	1	0	French info page
1	1	1	English info page

1
= Sync output to TV
= Oscillator output (6 MHz)
= Oscillator input (6 MHz)
= Composite video input
= Teletext data output
= Teletext clock output
= 6 MHz clock output
= Video composite sync output
= Sandcastle input
= Sync input

SAA 5241

$\overline{COR}$	= Contrast reduction
TTD	= Teletext data input
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F6	= 6 MHz clock input
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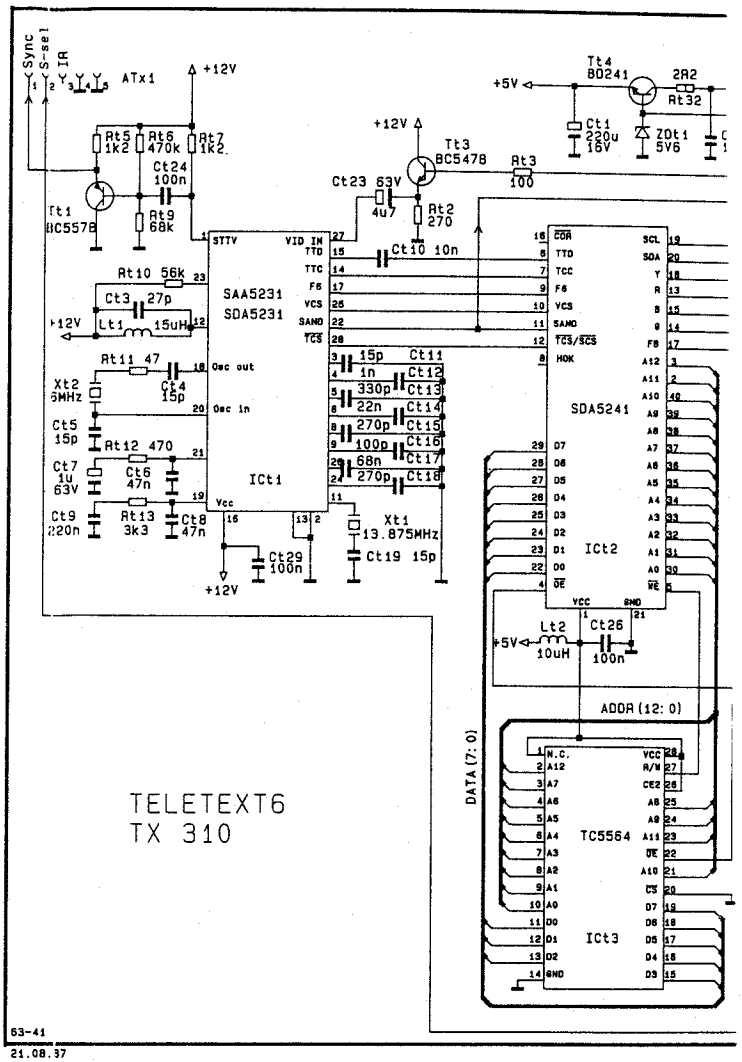

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SAA 5240

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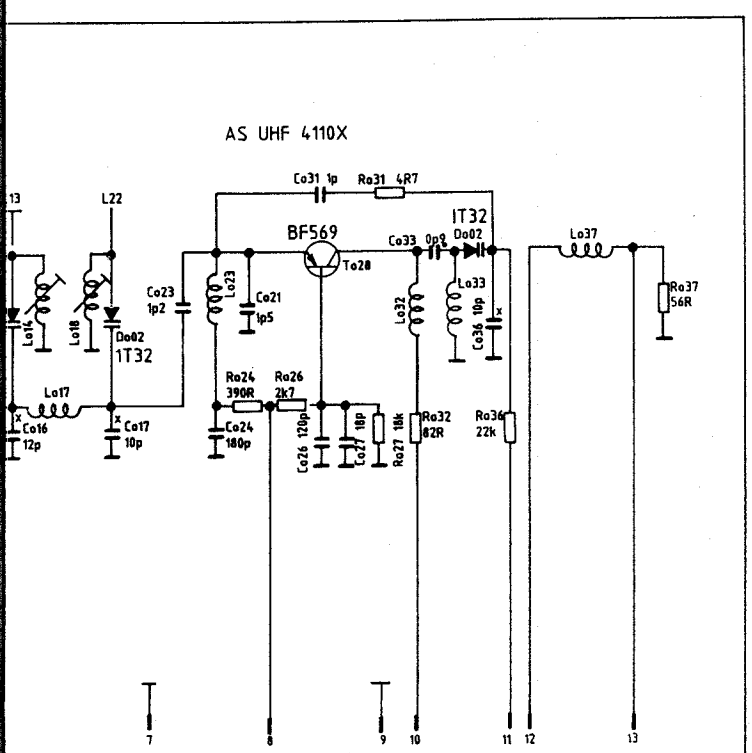
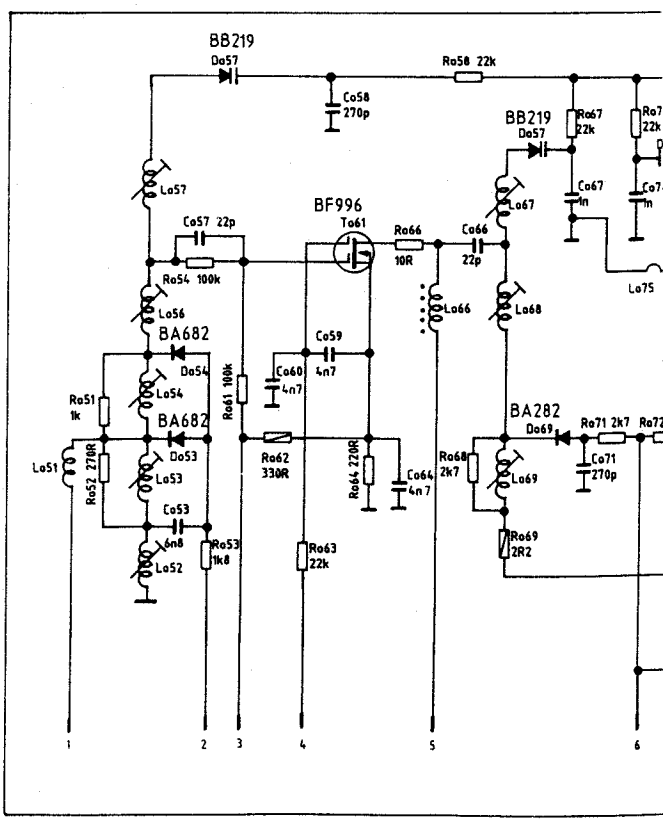
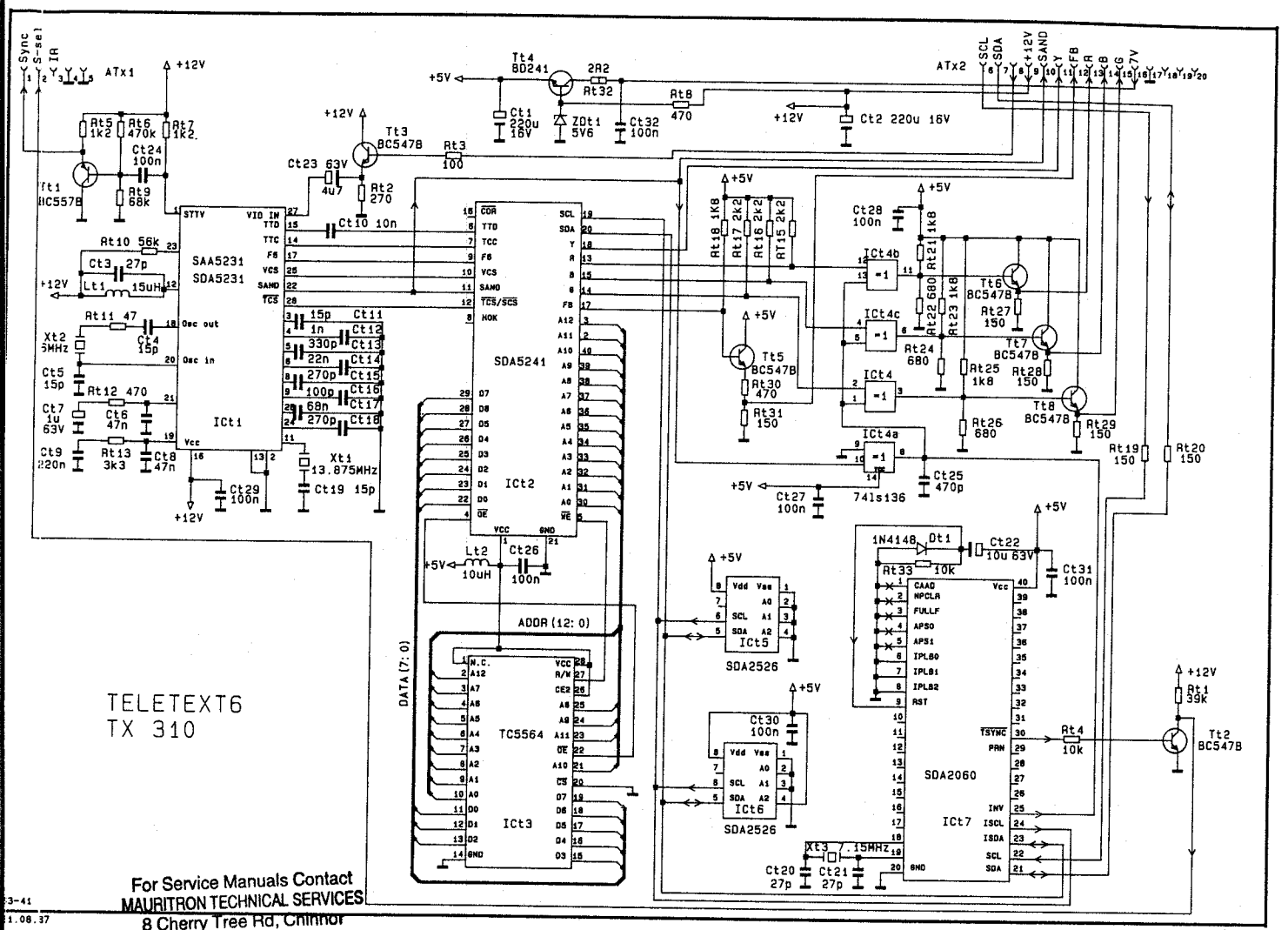
UHF SUBMODULE 4110





TELETEXT MODULE TX310



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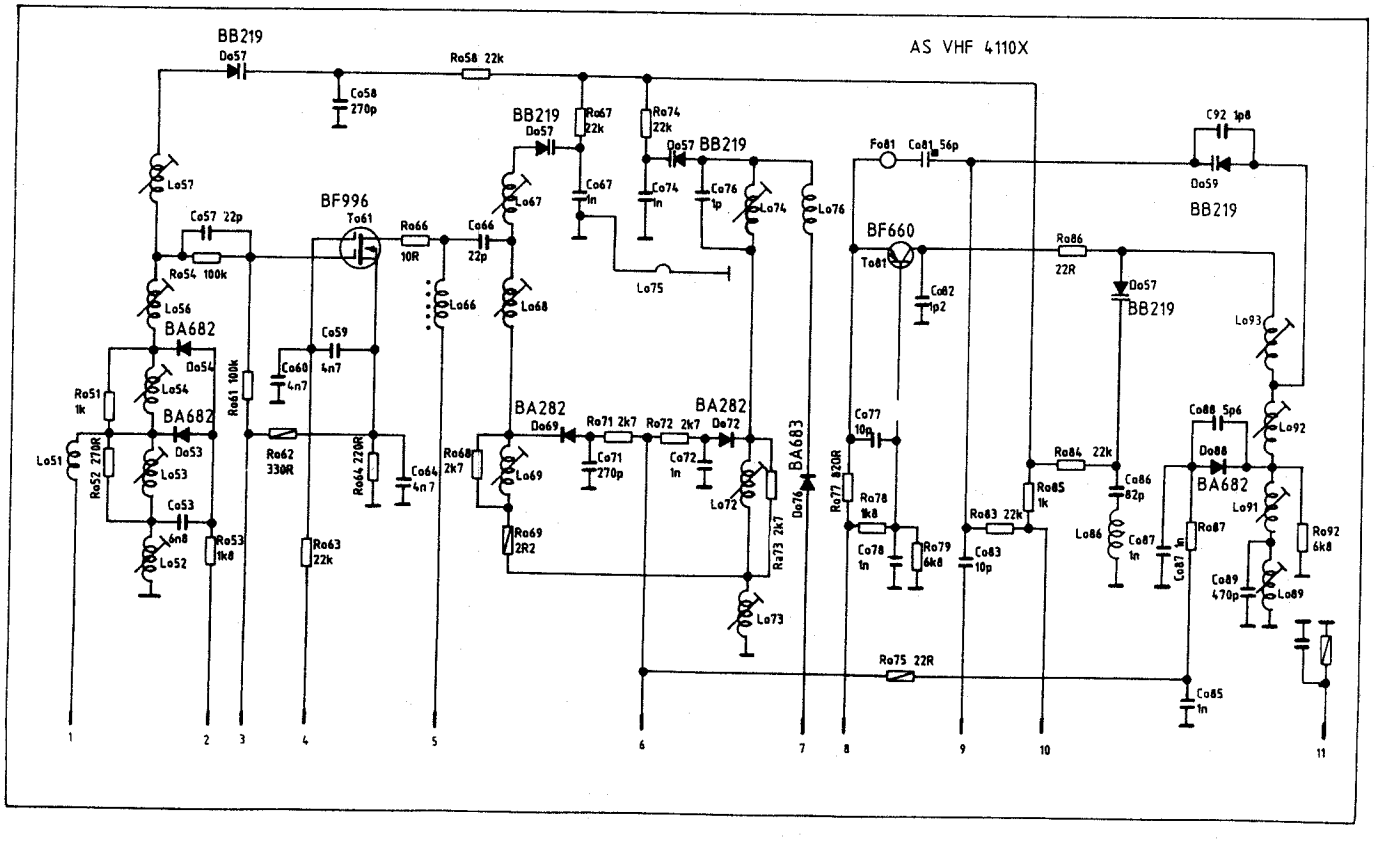
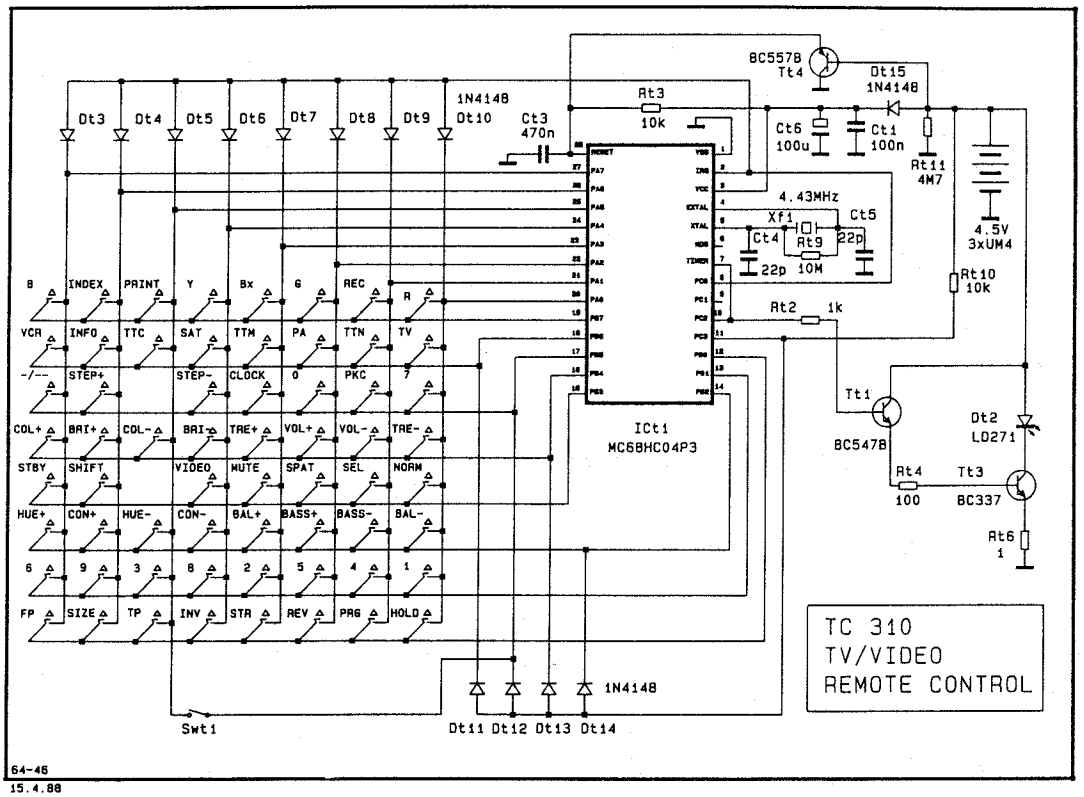
VHF SUBMODULE 4110





	RN100	RN101
Cr11	56p	56p + 100p
Fr01	TH316BQM-2080QDAF	TH316BQM-2110QDAF
Xr01	5,85 MHz	6,552 MHz

PERMANENT PROGRAMMING OF RC3010

Remote control hand unit RC3010 can be programmed for different VCRs by using programming switch and number buttons as described in instruction manual. The basic setting mode of the remote control functions is mode 0 (FINLUX VR 2008) or 8 (ASA VR 2017). You can change the basic setting permanently by mounting the diodes Dt11...Dt14 (1N 4148) according to the table 1. When changing the batteries or when remote control unit lacks the operating voltage for some other reason, the basic setting mode is always taken in use after reconnecting the operating voltage.
From table 2 you can find which VCR models function in which mode.

Mode 0	FINLUX VR 2008, SCHNEIDER 266
Mode 1	FINLUX VR 1010, 1012, 1030, 2010, 2030, 2040 ASA VR 6000, VR2019 PHILIPS VR 6443, 6543, 6862, 6462, 6660, 6467, 6760
Mode 2	SHARP 781, 783, 785, 100, 102, 501, 801, 851
Mode 3	SHARP 682, 683, 684, 685, 693, 6F3
Mode 4	JVC HR-D 170, 180, 210, 230, 310, 470, 755, 530 EH, 120, 300
Mode 5	D.E.R.
Mode 6	HITACHI VT-250, VT-120, VT-130, VT-150 414E, 420
Mode 7	PANASONIC NV-G 12, 21, 25, NV-870 BLAUPUNKT RTV-320
Mode 8	ASA VR 2017

Table 2

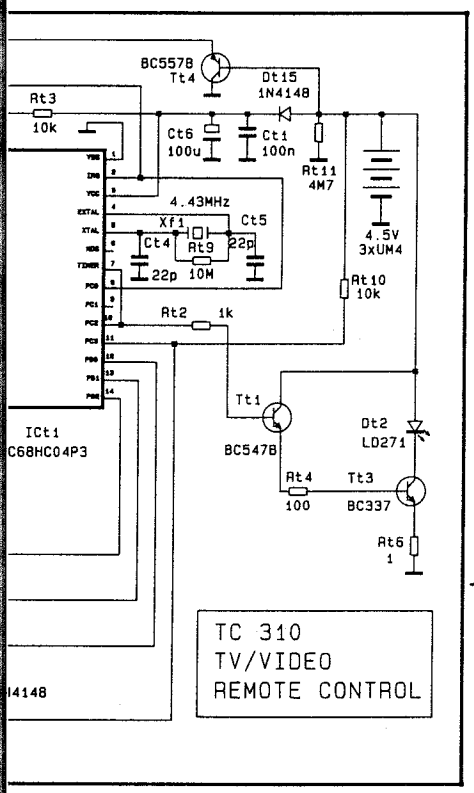
2) Mounting of the Nicam

- o Check that resistors R are missing, fit 15 kOh
- o Bend the coil Lf3 (6,8 unit.
- o Bend also the signal u connector.

	Dt11	Dt12	Dt13	Dt14
Mode 0	-	-	-	-
Mode 1	-	-	-	x
Mode 2	-	-	x	-
Mode 3	-	-	x	x
Mode 4	-	x	-	-
Mode 5	-	x	-	x
Mode 6	-	x	x	-
Mode 7	-	x	x	x
Mode 8	x	-	-	-

Table 1

Order no. Art.nr Tilausnumero	NICAM modele NICAM modul NICAM moduli	Tv-chassis Tv-chassi Tv-kojeisto
03500606	RN200	1202, 1204, 1208, 1212, 1213, 1218, 1222, 12 1242, 1248, 1288, 2232, 2242, 2272, 2282
03500607	RN100	1308, 1312, 1313, 1318, 1322, 1332, 1342, 13 2332, 2333, 2336, 2342, 2343, 2346, 2372, 23 2386
03500608	RN201	1402, 1408, 1412, 1413, 1418, 1422, 1432, 24
03500609	RN101	1622, 1632, 1642, 2633, 2643, 2672, 2682



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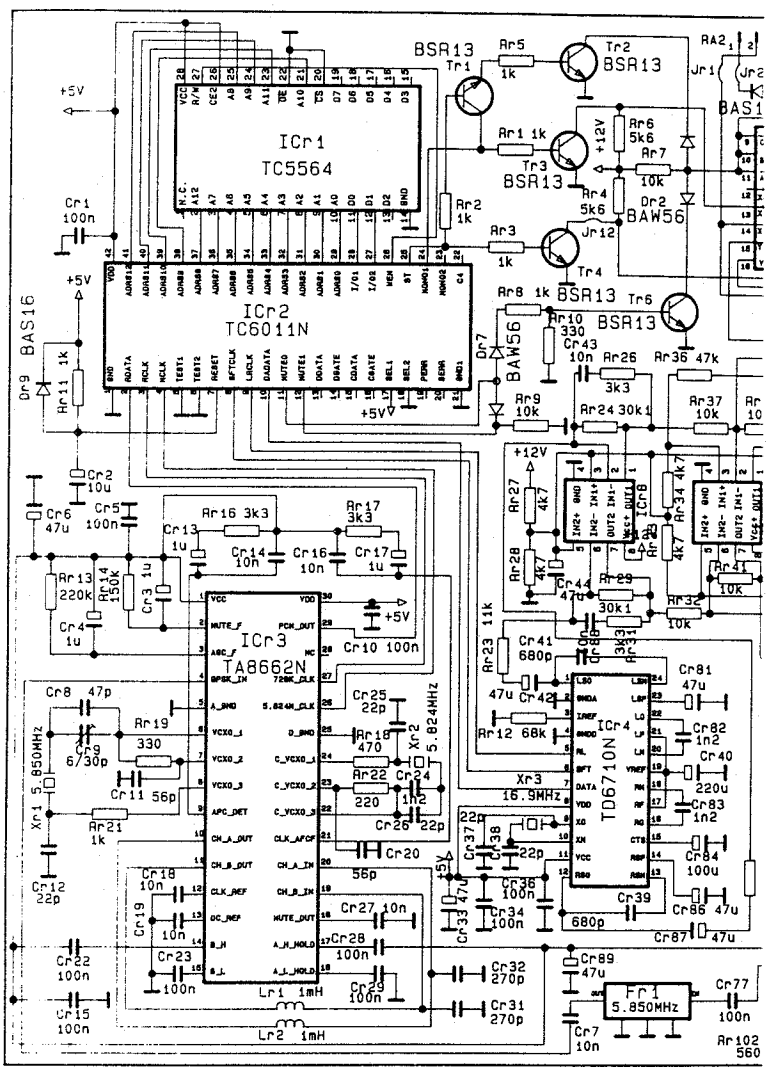


	RN100	RN101
Cr11	56p	56p + 100p
Fr01	TH316BQM-20800DAF	TH316BQM-21100DAF
Xr01	5,85 MHz	6,552 MHz

FINLUX VR 2008, SCHNEIDER 266
FINLUX VR 1010, 1012, 1030, 2010, 2030, 2040 ASA VR 6000, VR2019 PHILIPS VR 6443, 6543, 6862, 6462, 6660, 6467, 6760
SHARP 781, 783, 785, 100, 102, 501, 801, 851
SHARP 682, 683, 684, 685, 693, 6F3
JVC HR-D 170, 180, 210, 230, 310, 470, 755, 530 EH, 120, 300
D.E.R.
HITACHI VT-250, VT-120, VT-130, VT-150 414E, 420
PANASONIC NV-G 12, 21, 25, NV-870 BLAUPUNKT RTV-320
ASA VR 2017

Table 2

2) Mounting of the Nicam module

- Check that resistors RI6 and RI7 have been composed in the receivers signal unit. If these resistors are missing, fit 15 kohm 0,25 W 5%:
- Bend the coil Lf3 (6,8 µH) of the NICAM module so that it doesn't tuoch a coolingplate of the signal unit.
- Bend also the signal units components that they won't touch the NICAM module when muonting it on connector.

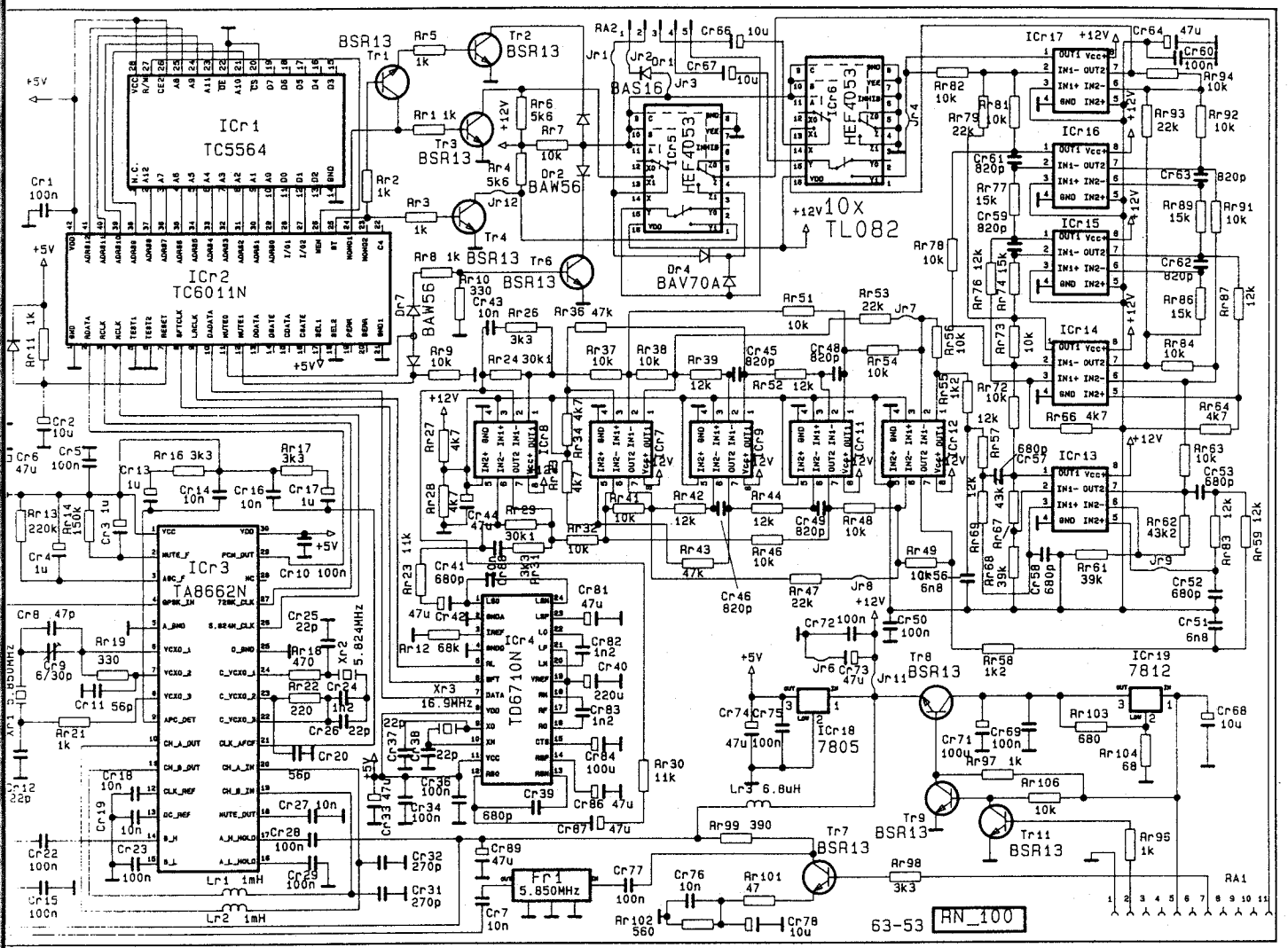
	NICAM modele NICAM modul NICAM moduli	Tv-chassis Tv-chassi Tv-kojeisto
	RN200	1202, 1204, 1208, 1212, 1213, 1218, 1222, 1232, 1238, 1242, 1248, 1288, 2232, 2242, 2272, 2282
	RN100	1308, 1312, 1313, 1318, 1322, 1332, 1342, 1378, 1388, 2332, 2333, 2336, 2342, 2343, 2346, 2372, 2376, 2382, 2386
	RN201	1402, 1408, 1412, 1413, 1418, 1422, 1432, 2472, 2482
	RN101	1622, 1632, 1642, 2633, 2643, 2672, 2682

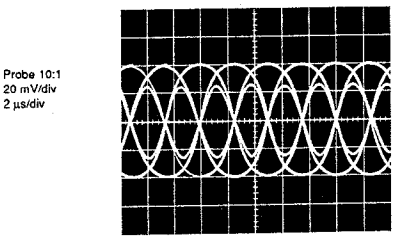
FITTING INSTRUCTIONS OF NICAM 728 MODULE FOR 1000/2000-SERIES RN201

"No-CTI-chassis", models 1402, 1408, 1412, 1413, 1418, 1422, 1432, 2472, 248

1. If there is an extra sound module fitted in the receiver, remove it. The NICAM-module will be fitted i same connector.
2. Fit the attached wire between Ra6 and pin 2 of 2ND SOUND connector, as shown in figure 1.
3. Fit the attached bundle of wires to components RI6 and RI7 on the component side and to componer and DI11 on the foil side, as shown in figure 1. R- and L-channel wires are fitted on the component prevent radio disturbances.
4. Fit the NICAM module as follows: remove the connector frame, fit the NICAM module to the 2ND S connector and fit the attached connector frame to its place.
5. Connect the plug of the attached bundle of wires to the socket on the NICAM module. Route the 2-sound and St/mono wires under the signal unit, as shown in figure 1.

NICAM MODULE RN100 RN101





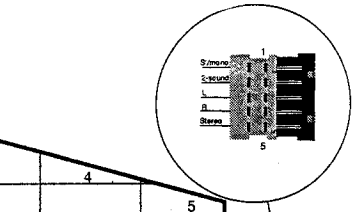
Probe 10:1
20 mV/div
2 µs/div

odule

and RI7 have been composed in the receivers signal unit. If these resistors
0,25 W 5%:

) of the NICAM module so that it doesn't tuoch a coolingplate of the signal

s components that they won't touch the NICAM module when muonting it on



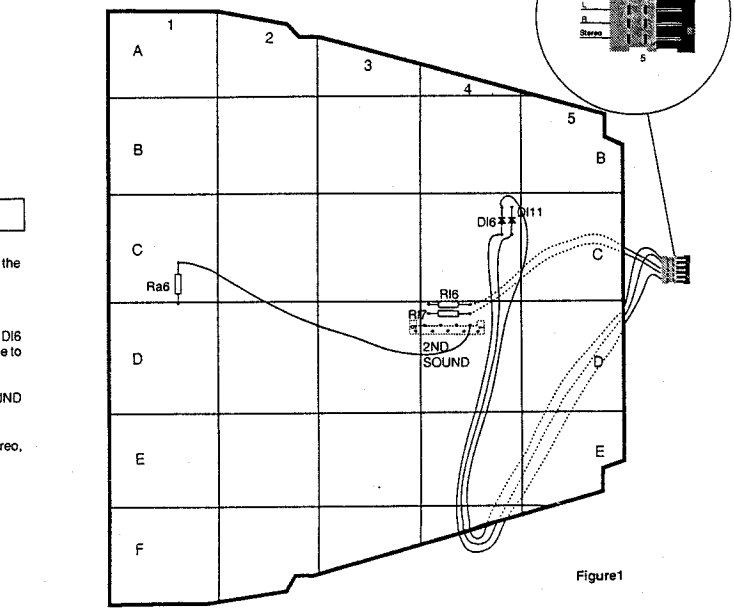


Figure1

1238,

1388,
2382,

2482

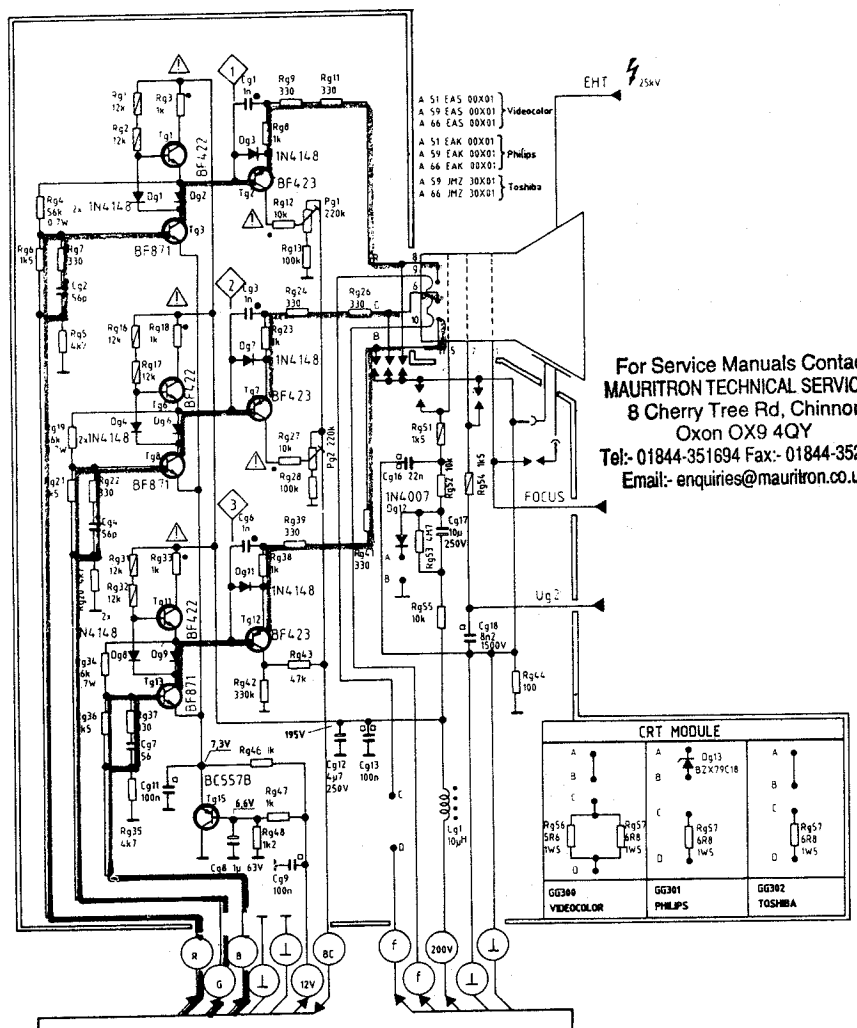
FITTING INSTRUCTIONS OF NICAM 728 MODULE FOR 1000/2000-SERIES RN201

"No-CTI-chassis", models 1402, 1408, 1412, 1413, 1418, 1422, 1432, 2472, 2482

1. If there is an extra sound module fitted in the receiver, remove it. The NICAM-module will be fitted into the same connector.
2. Fit the attached wire between Ra6 and pin 2 of 2ND SOUND connector, as shown in figure 1.
3. Fit the attached bundle of wires to components RI6 and RI7 on the component side and to components DI6 and DI11 on the foil side, as shown in figure 1. R- and L-channel wires are fitted on the component side to prevent radio disturbances.
4. Fit the NICAM module as follows: remove the connector frame, fit the NICAM module to the 2ND SOUND connector and fit the attached connector frame to its place.
5. Connect the plug of the attached bundle of wires to the socket on the NICAM module. Route the stereo, 2-sound and St/mono wires under the signal unit, as shown in figure 1.

FINLUX 3021

CRT MODULE



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8 Cherry Tree Rd, Chinnor
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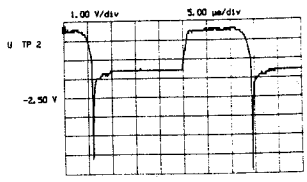
Email:- enquiries@mauritron.co.uk

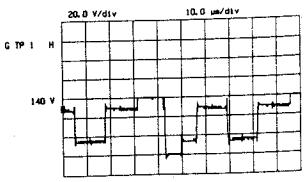
- B/B-Y =BLUE OR B-Y COLOUR DIFFERENCE SIGNAL
- G/Y =GREEN OR LUMINANCE SIGNAL
- R/R-Y =RED OR R-Y COLOUR DIFFERENCE SIGNAL
- FB =FAST BLANKING SIGNAL
- R OUT =RIGHT AUDIO CHANNEL
- L OUT =LEFT AUDIO CHANNEL
- SCL =SERIAL CLOCK
- SDA =SERIAL DATA
- R IN =RIGHT AUDIO CHANNEL
- L IN =LEFT AUDIO CHANNEL
- CVBS IN =VIDEO SIGNAL
- CVBS OUT =VIDEO SIGNAL
- RC =REMOTE CONTROL
- STA1 =STATUS FROM SCART 1
- STA2 =STATUS FROM SCART 2
- L HP =LEFT AUDIO CHANNEL FOR HEADPHONES
- R HP =RIGHT AUDIO CHANNEL FOR HEADPHONES
- SAT COPY =SATELLITE COPYING
- MODE 1 =MODE INFORMATION 1
- MODE 2 =MODE INFORMATION 2
- RGB INV =RGB INVERTING
- HOLD =PROCESSOR DISCONNECTING FROM I²C-BUS
- P-ON =PICTURE ON DRIVING VOLTAGE 12 V
- S-ON =SOUND ON DRIVING VOLTAGE 12 V
- BC =BLACK CURRENT
- EW =EAST-WEST RASTER CORRECTION
- BCL =BEAM CURRENT LIMITING VOLTAGE
- 7V TXT =SUPPLY VOLTAGE FOR TELETEXT MODULE
- H FLYB =LINE FLYBACK
- H DRIVE =DRIVE PULSES FOR LINE OUTPUT STAGE
- f =FILAMENT VOLTAGE FOR CRT

D8
D6
D7
D8
D6
D6

BC 557 B, BC 547 B, BC 337-25 — BFR 88, BC 637, BF 423, BF 422 — BF 763 — BF 959, BF 199

BF 881 — BD 241 A — BU 508 AF, BU 908 F, S 2000 AF





Ceramic	Polystyren	Polyester Polycarbon	Polypropyl	Notes can be combined when necessary	
63 - 100V	63 - 100V	100V	100V	Paper capac	
				16V	1500V
160 - 250V	160 - 250V	250V	250V	Electrol 16V	1500V
400 - 500V		400 V	400 V	Bipol capac	Foliu capac
Hi - Cap				Tantal capac	Y capacitors

1/4 W, 1/2 W, 1 W, 2 W, 3 W, 7 W

Low noise/Rauscharm/Brumfrei/Pienkohmwarm

Flame proof/Nicht brenn./Flammsicher/Palamaten

Thermal fuse/Auslöse-sicherung/Termisk säkring/Lampsmältsäkring

Fuse resistor/Sicherungswiderstand/Säkringsmotstånd/Sulkuvastus

⚠ Critical safety component. Use identical component for replacement.

Amplifier	Gain controlled amplifier	Divider	Inverter	
Multiplier	Digital analog converter	Sandcastle pulse generator	Limiter	Demodulator
Voltage regulator	Oscillator	Switch		Sawtooth generator
Schmitt trigger		Phase detector		

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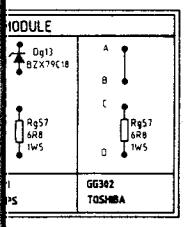
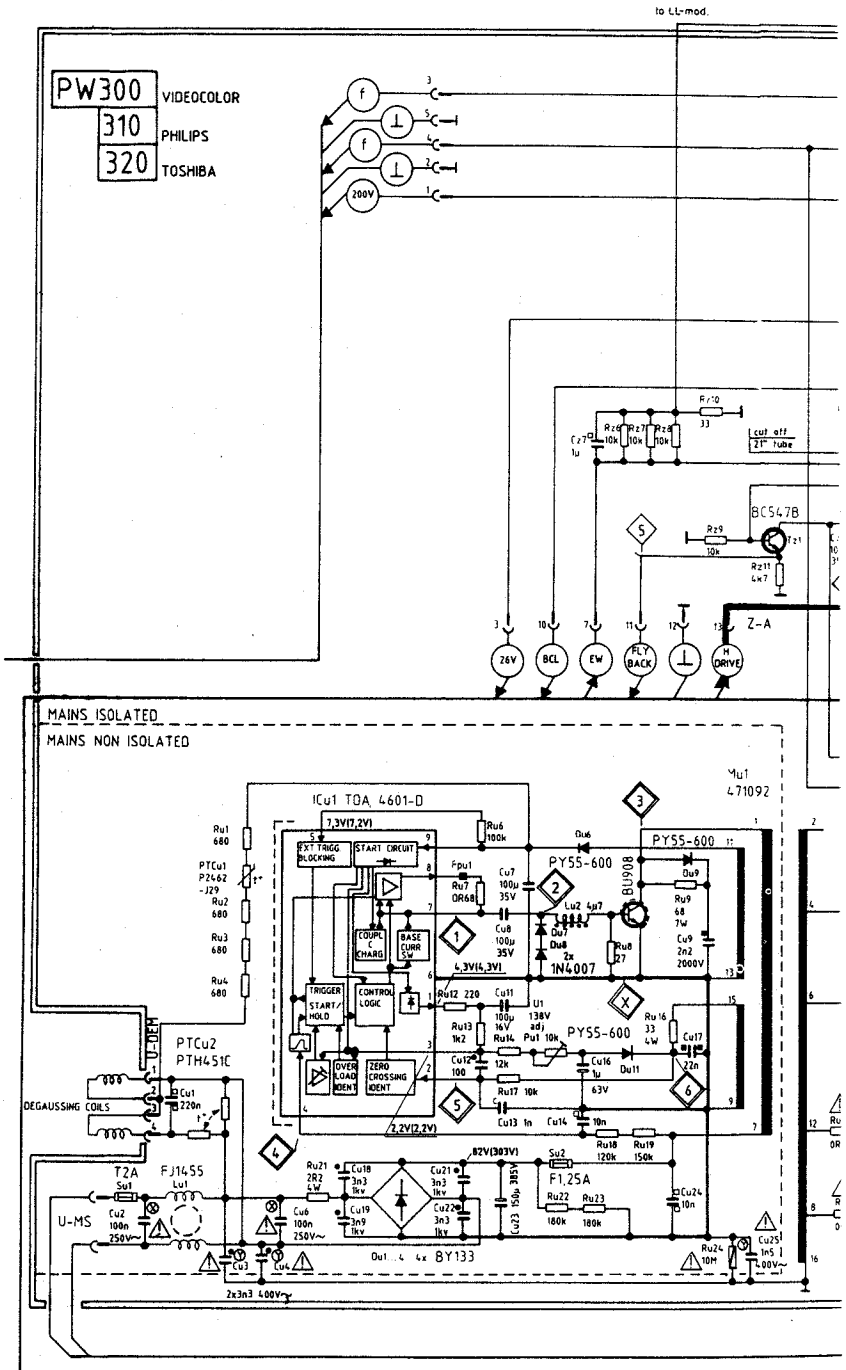
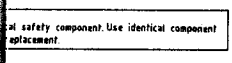
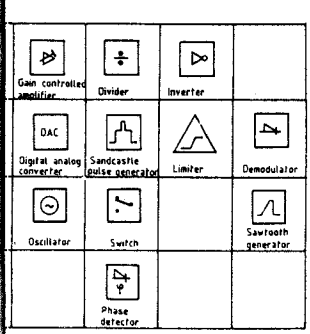


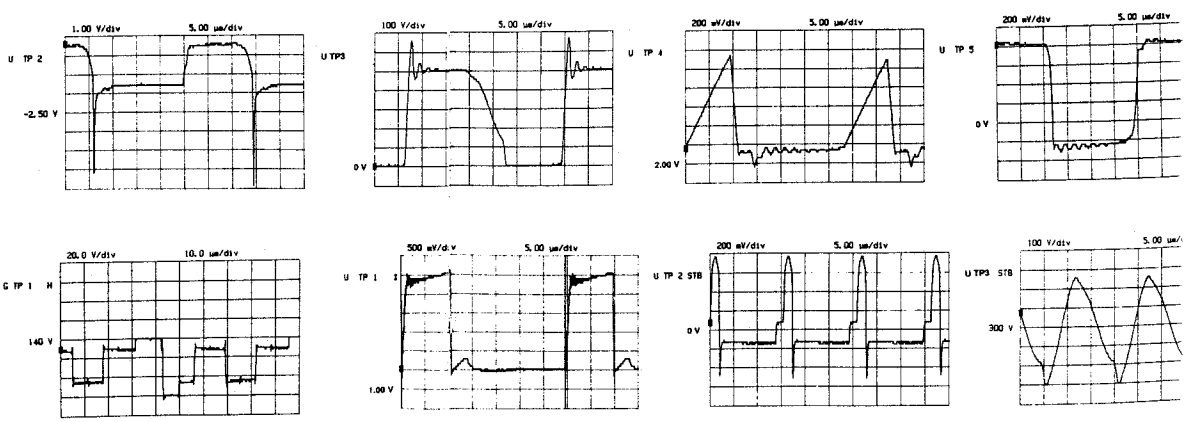


D8

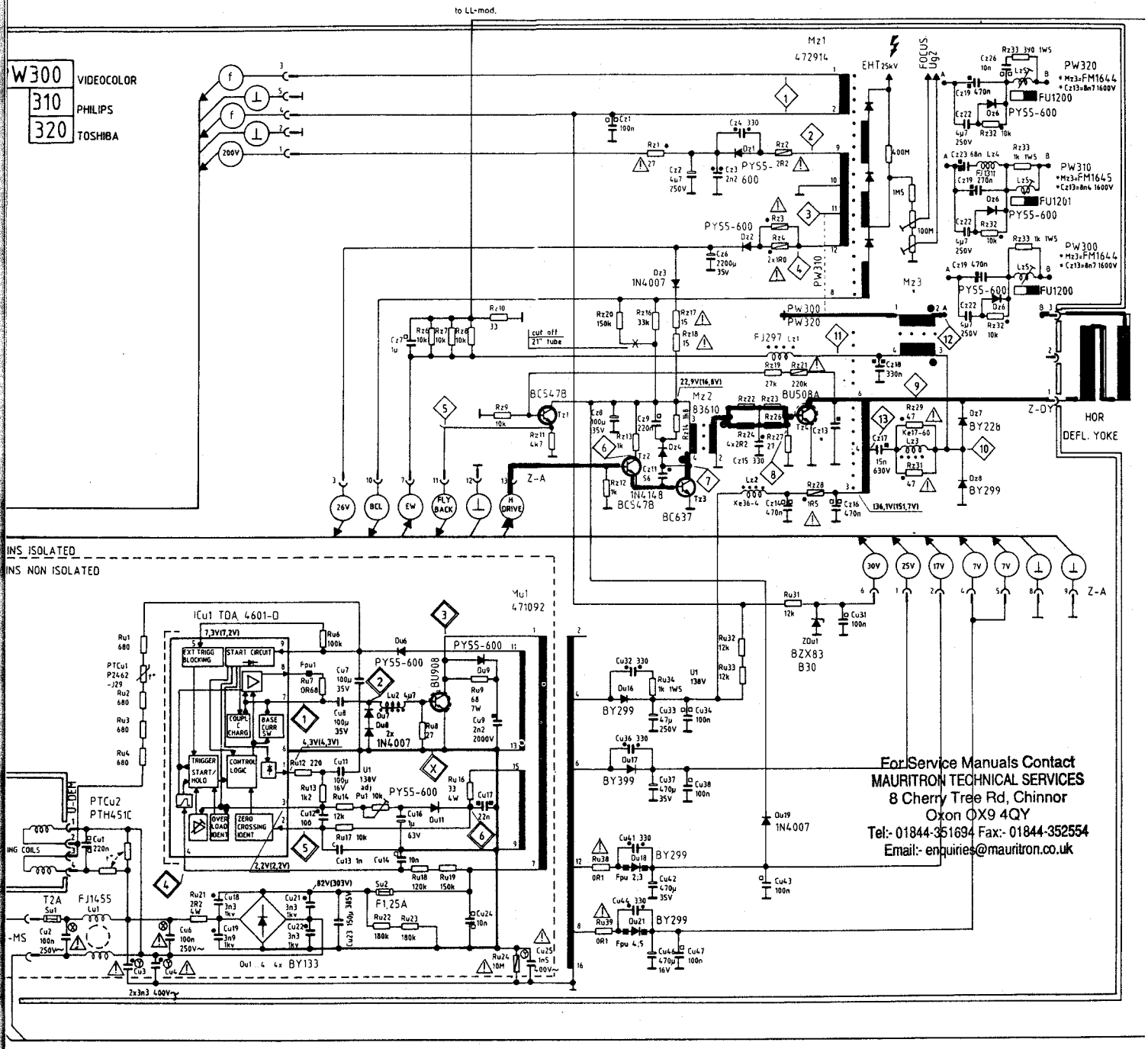
D6



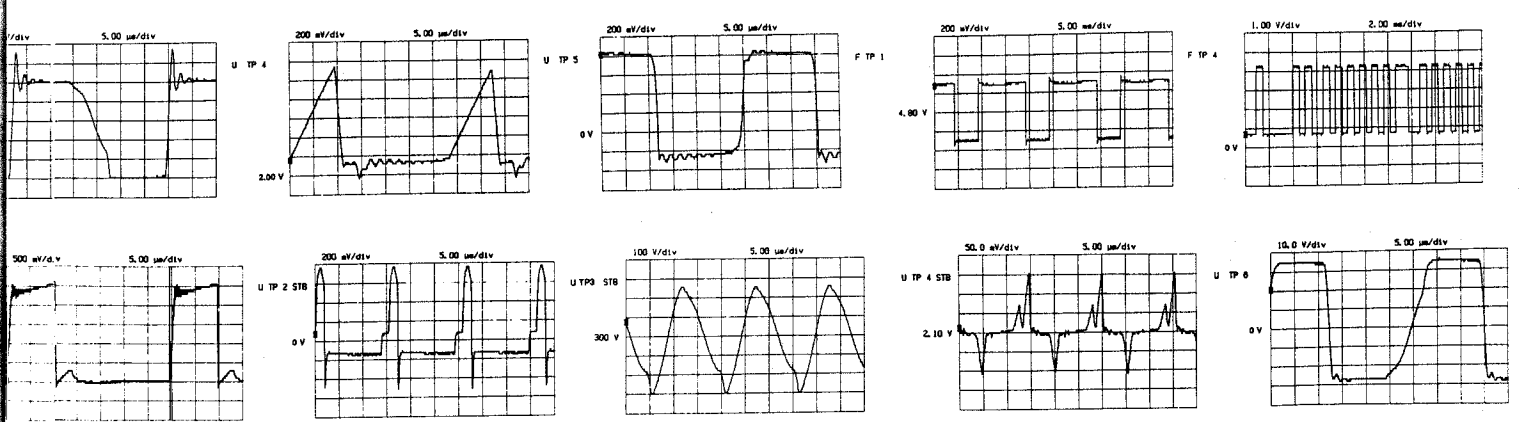




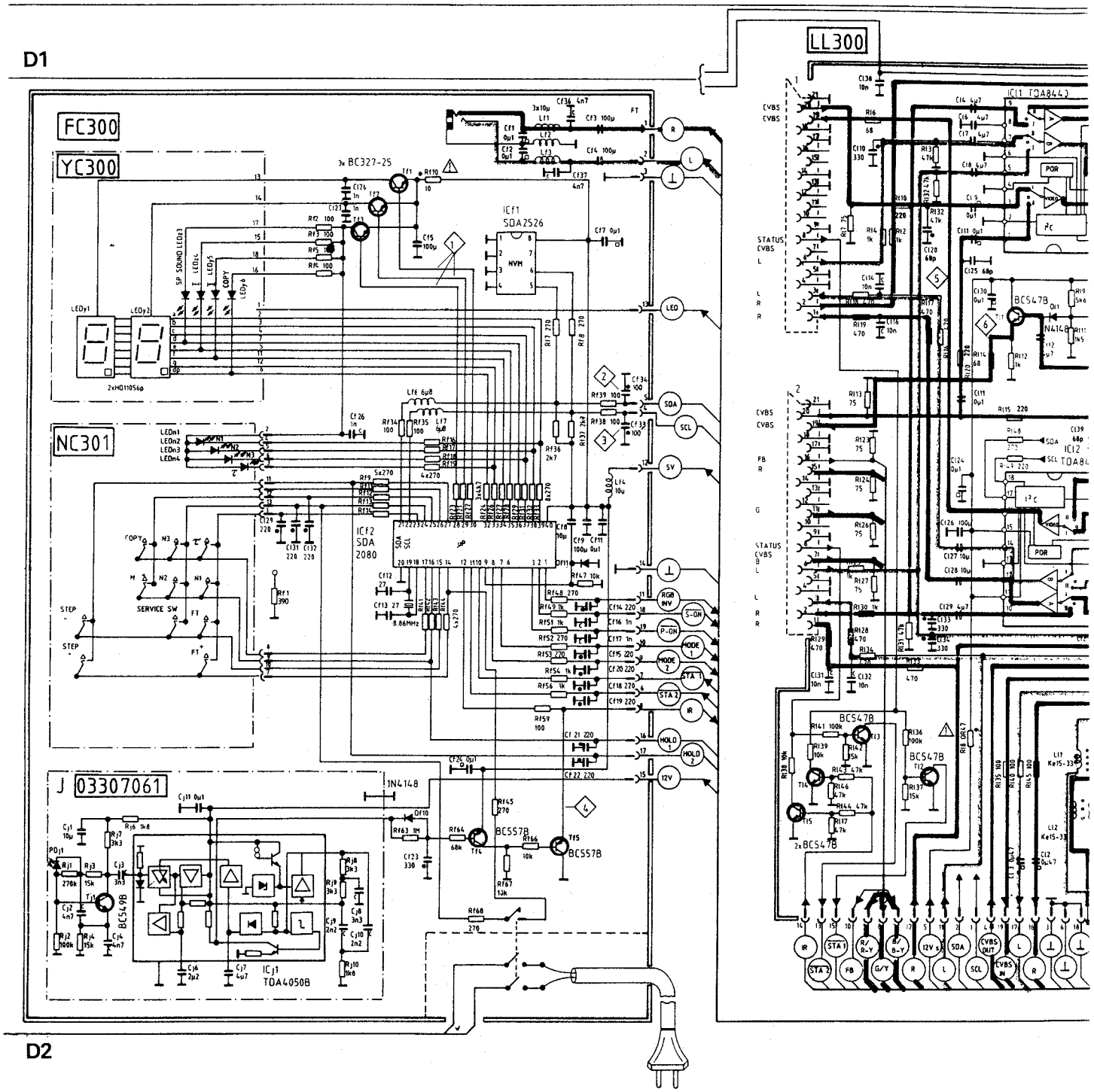
HOR DEFLECTION



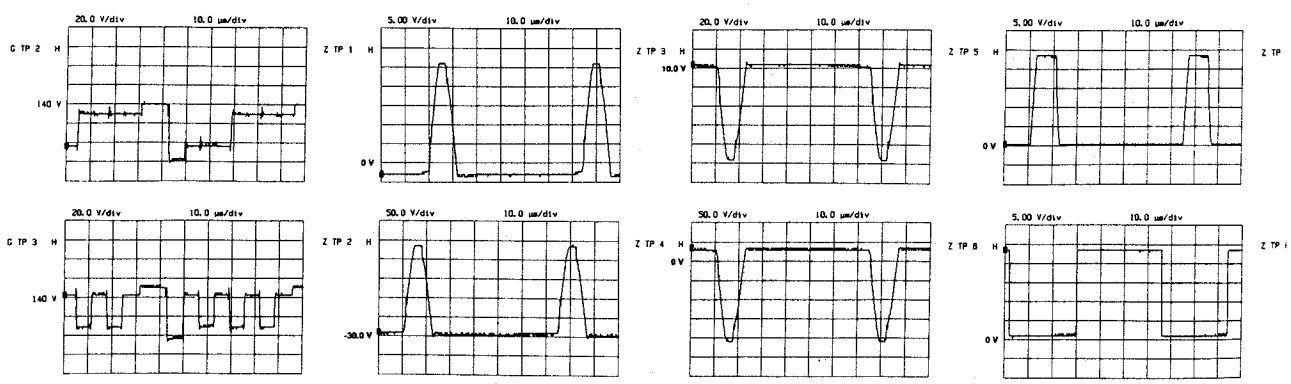
POWER SUPPLY

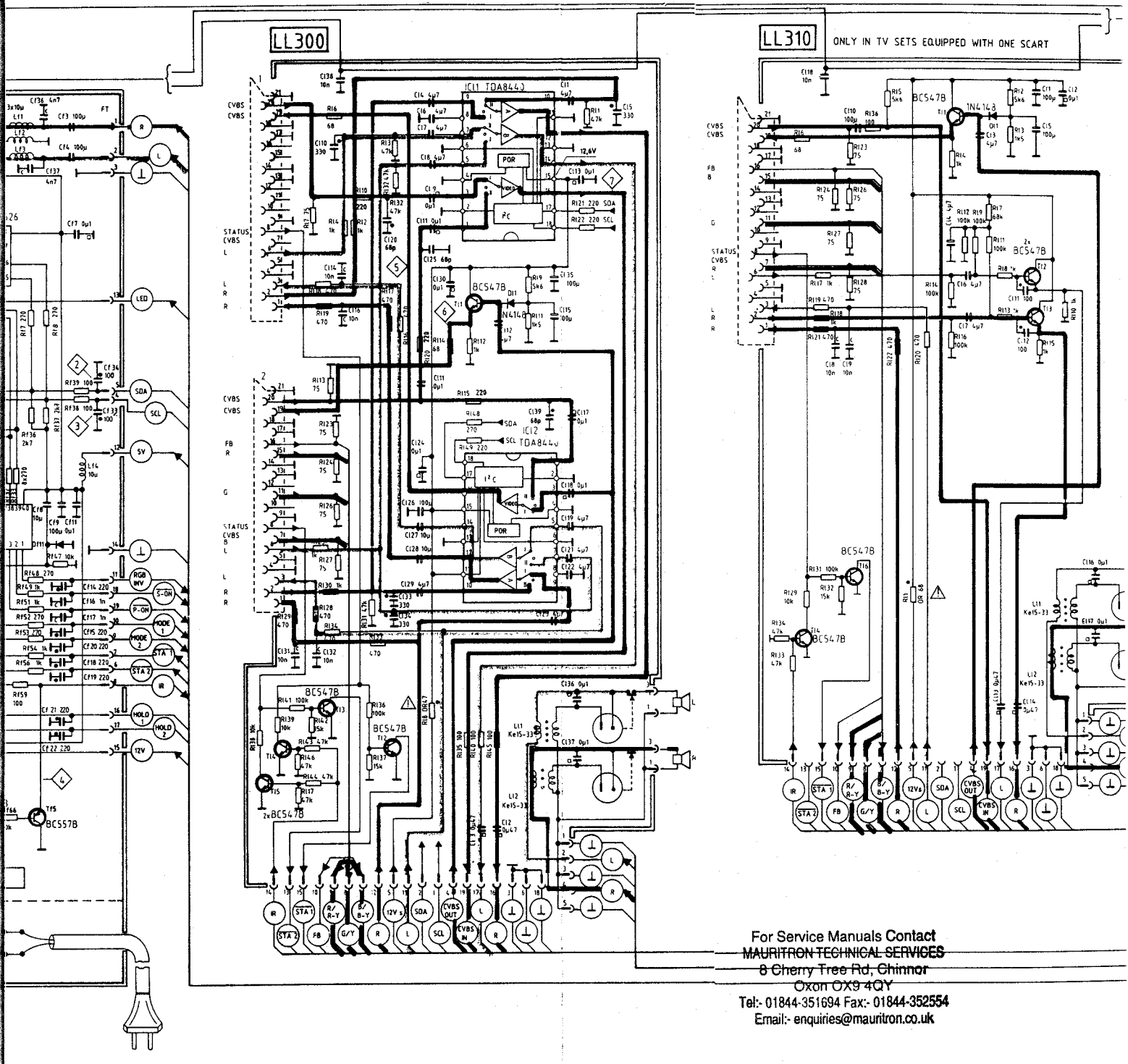


D1


FC300
YC300
NC301
LL300
J 03307061
ICF1 SDA2526
ICF2 SDA 2080
IC11 TDA8443
IC12 TDA8
IC J1 TDA4050B
2xBC547B
BC557B
BC548B
SERVICE SW
STEP
COPY
SCL
SDA
5V
LED
12V
HOLD
MODE
STA
STA 2
IR
S-ON
P-ON
RGB INH
CVBS
STATUS
POR

D2


20.0 V/div
10.0 µs/div
5.00 V/div
50.0 V/div
G TP 2
Z TP 1
Z TP 3
Z TP 5
G TP 3
Z TP 2
Z TP 4
Z TP 6
140 V
0 V
10.0 V
-30.0 V



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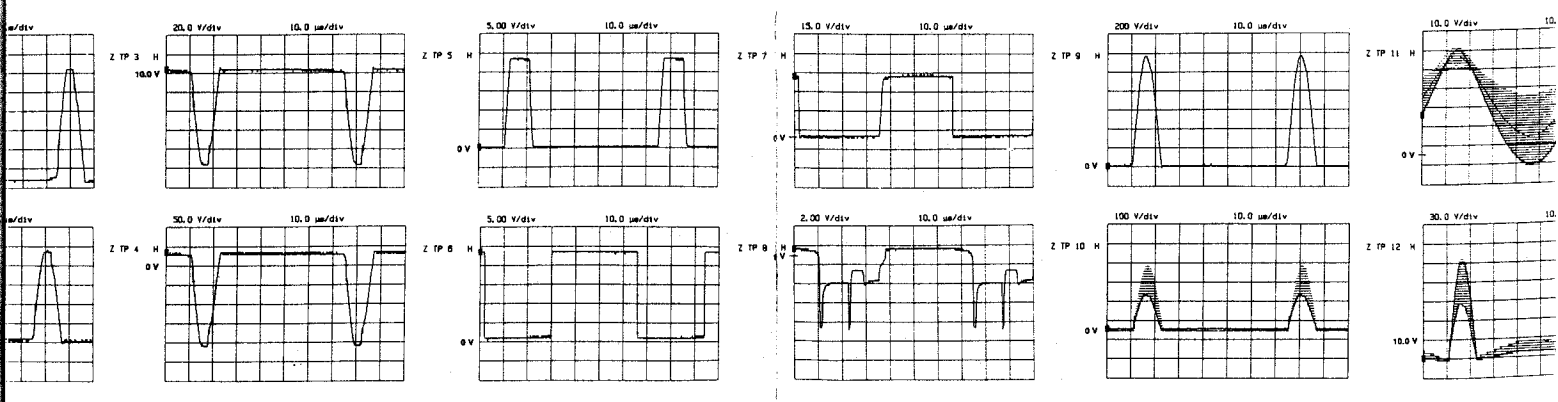
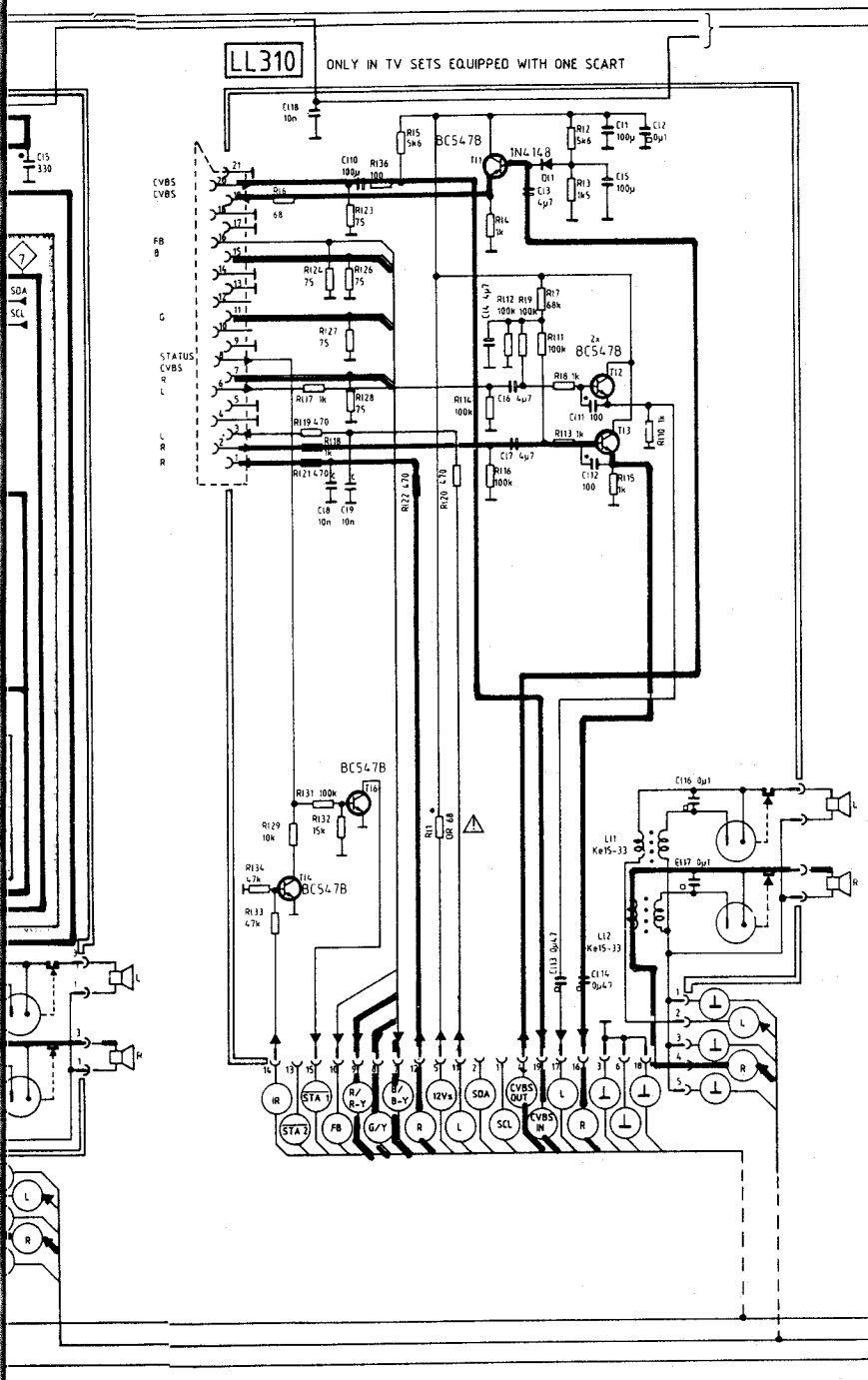


CONNECTOR UNIT



POWER SUPPLY/HORIZONTAL DEFLECTION UNIT

PW300 PW310 PW320

(GB)

SERVICE ADJUSTMENTS

U. POWER SUPPLY

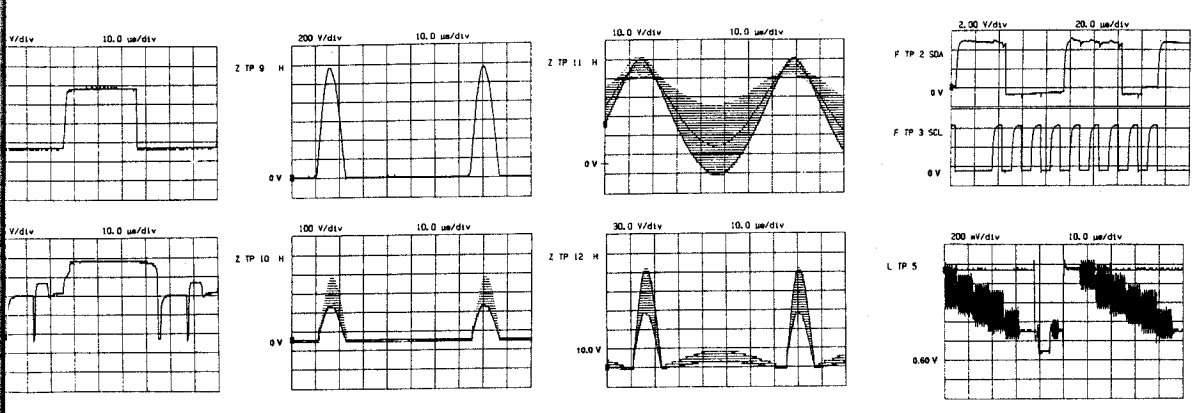
U1. Supply voltage
Set brightness and contrast to normal level. Connect an universal voltmeter to the cathode of Du16. Adjust DC-voltage for +138V (±2V) with Pu1.

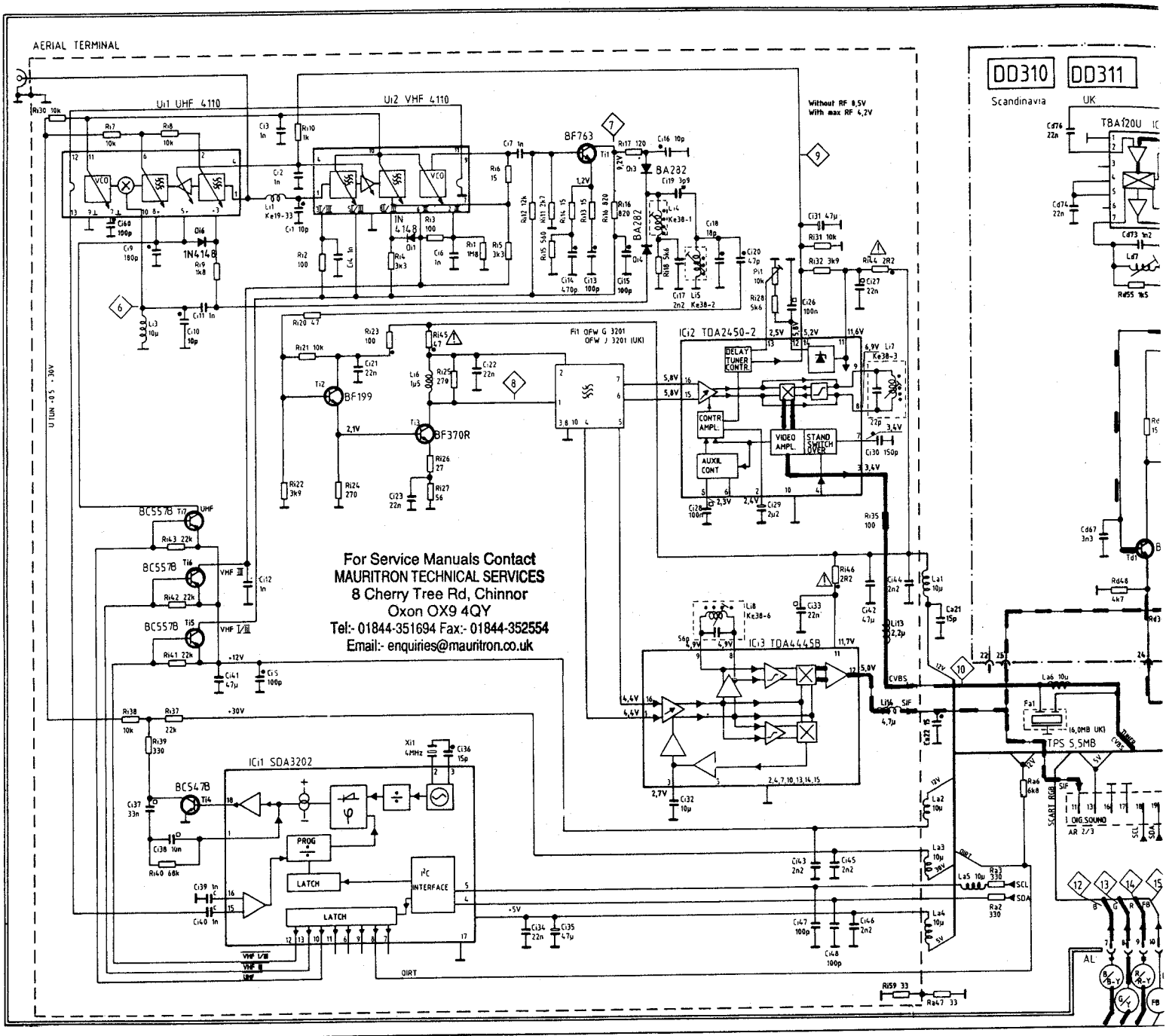
Z. HORIZONTAL DEFLECTION

Z1. Horizontal linearity
Adjust with Lz5.

Z2. Focusing
Set the brightness and contrast to normal level. Using the cross hatch pattern adjust the picture for optimum resolution.

Z3. Screen grid voltage
Set contrast to minimum, brightness and colour saturation to normal level. Use an oscilloscope and control on measuring points 1, 2 and 3 the amplitude of inserted black level clamp pulses during 3 line periods after vertical blanking. Adjust the amplitude of highest clamp pulse to +140V with Ug2 (SCREEN) control (see figure).





D3

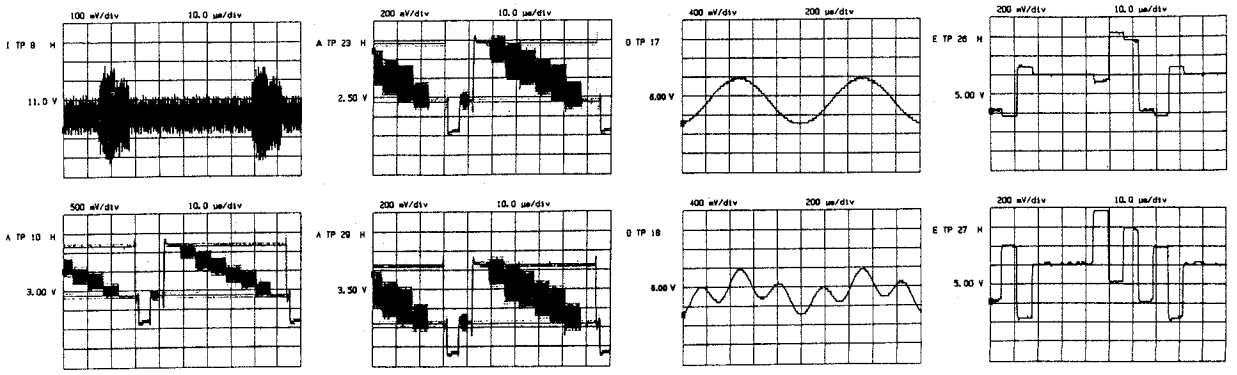
D4

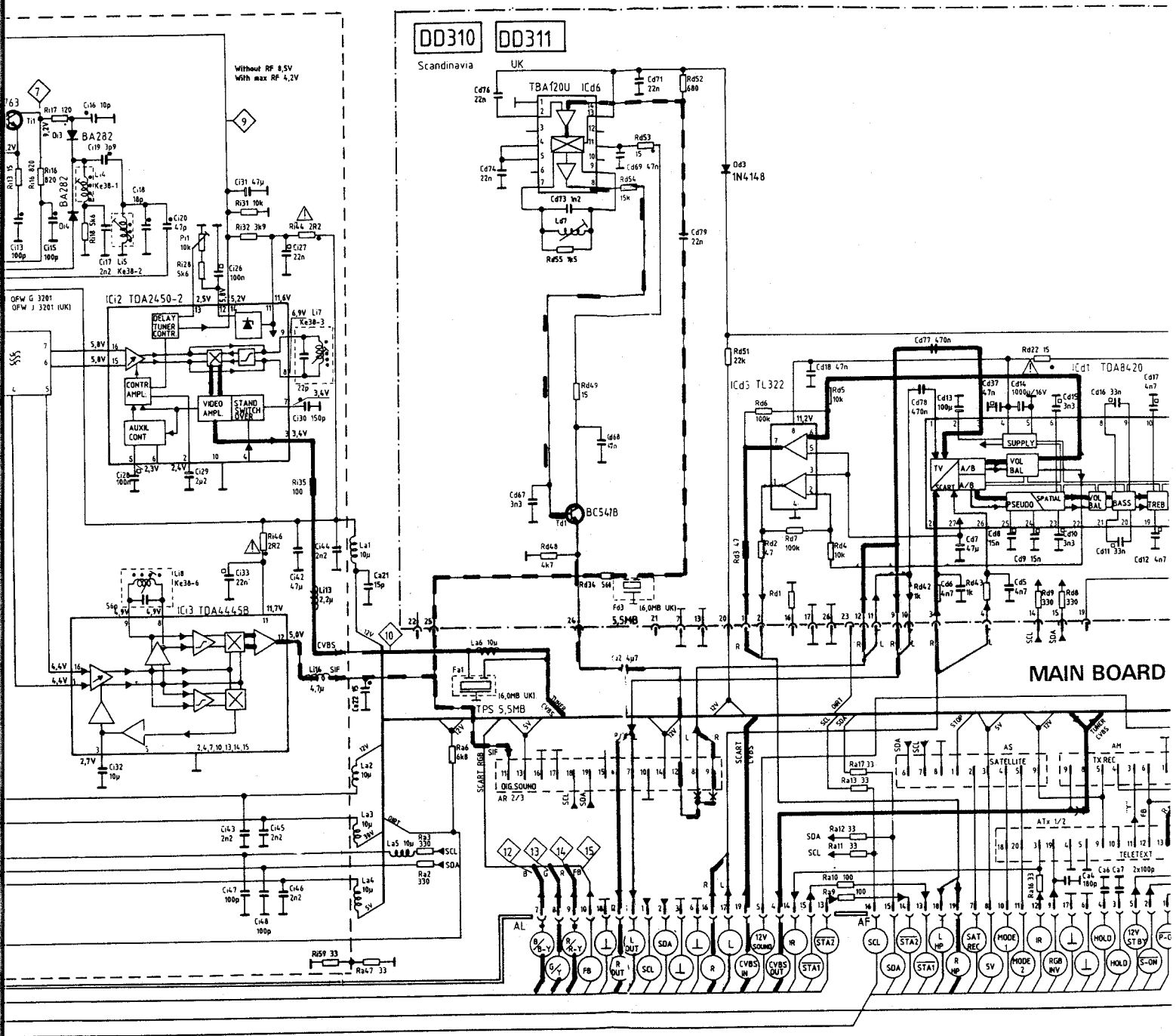
D5

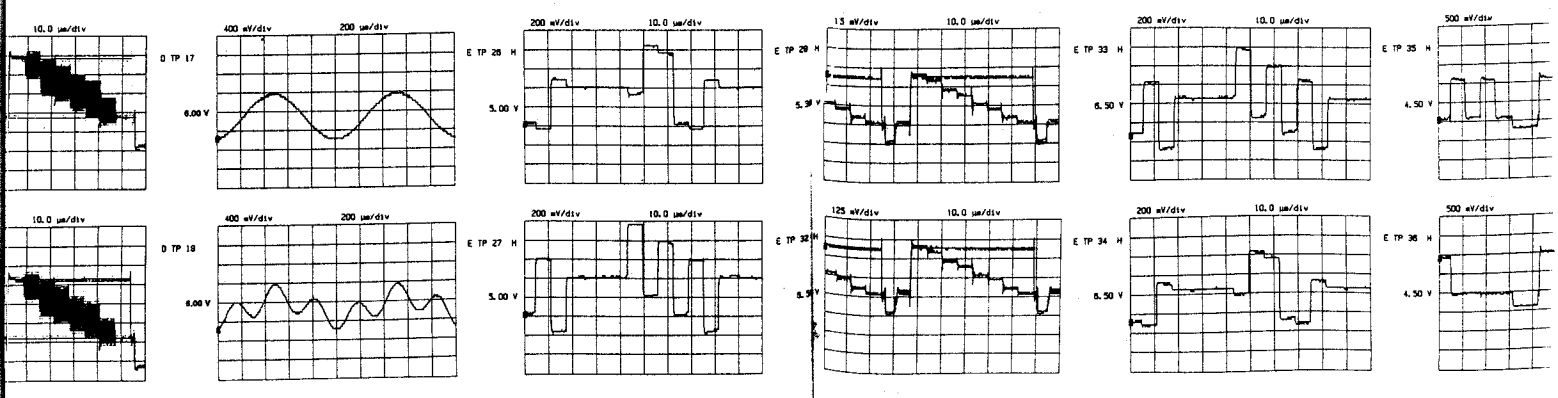
TYPES

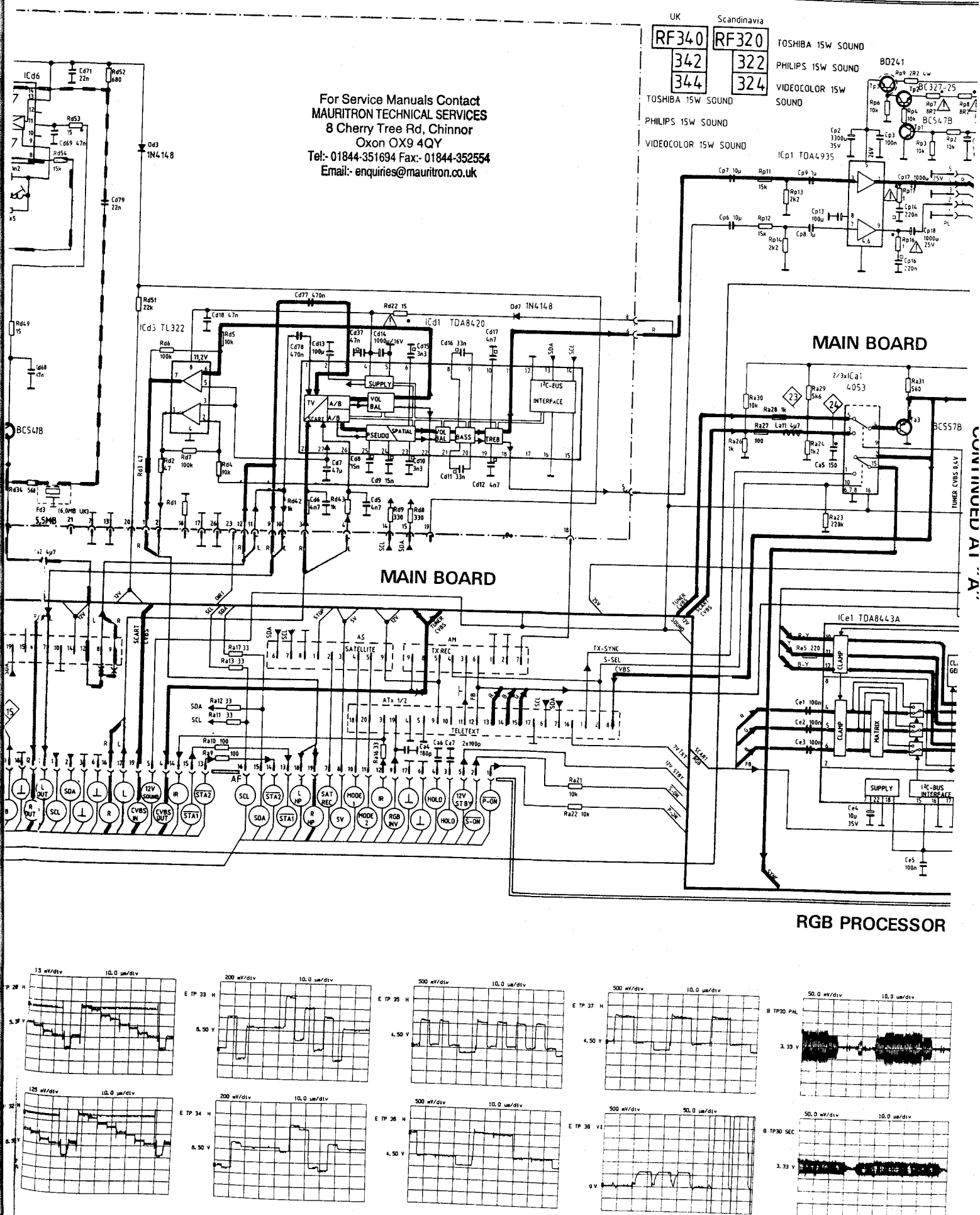
MODELS

3021F
3024F
3028F
3024S
3028S
3024E
3028E
3024M
3028M




DD310
DD311
Scandinavia
UK
Without RF 8,5V
With max RF 4,2V
TBA120U ICd6
ICi2 TDA2450-2
ICi3 TDA4458
ICd3 TL322
ICd1 TDA8420
BC547B
BA282
1N4148
DELAY TUNER CONTR
CONTR AMPL
VIDEO AMPL
STAND SWITCH OVER
AUXIL CONT
SUPPLY
PSEUDO
SPATIAL
BASS
TREB
5,5MB
16,0MB UK
TPS 5,5MB
MAIN BOARD
SATELLITE
TELETEXT
CVBS
SIF
SCART RGB
SCART CVBS
OIG.SOUND
AR 2/3
AL
AF


E TP 17
E TP 18
E TP 26
E TP 27
E TP 28
E TP 32
E TP 33
E TP 34
E TP 35
E TP 36


UK
RF340
342
344
Scandinavia
RF320
322
324
TOSHIBA 15W SOUND
PHILIPS 15W SOUND
VIDEOCOLOR 15W SOUND
TOSHIBA 15W SOUND
PHILIPS 15W SOUND
VIDEOCOLOR 15W SOUND
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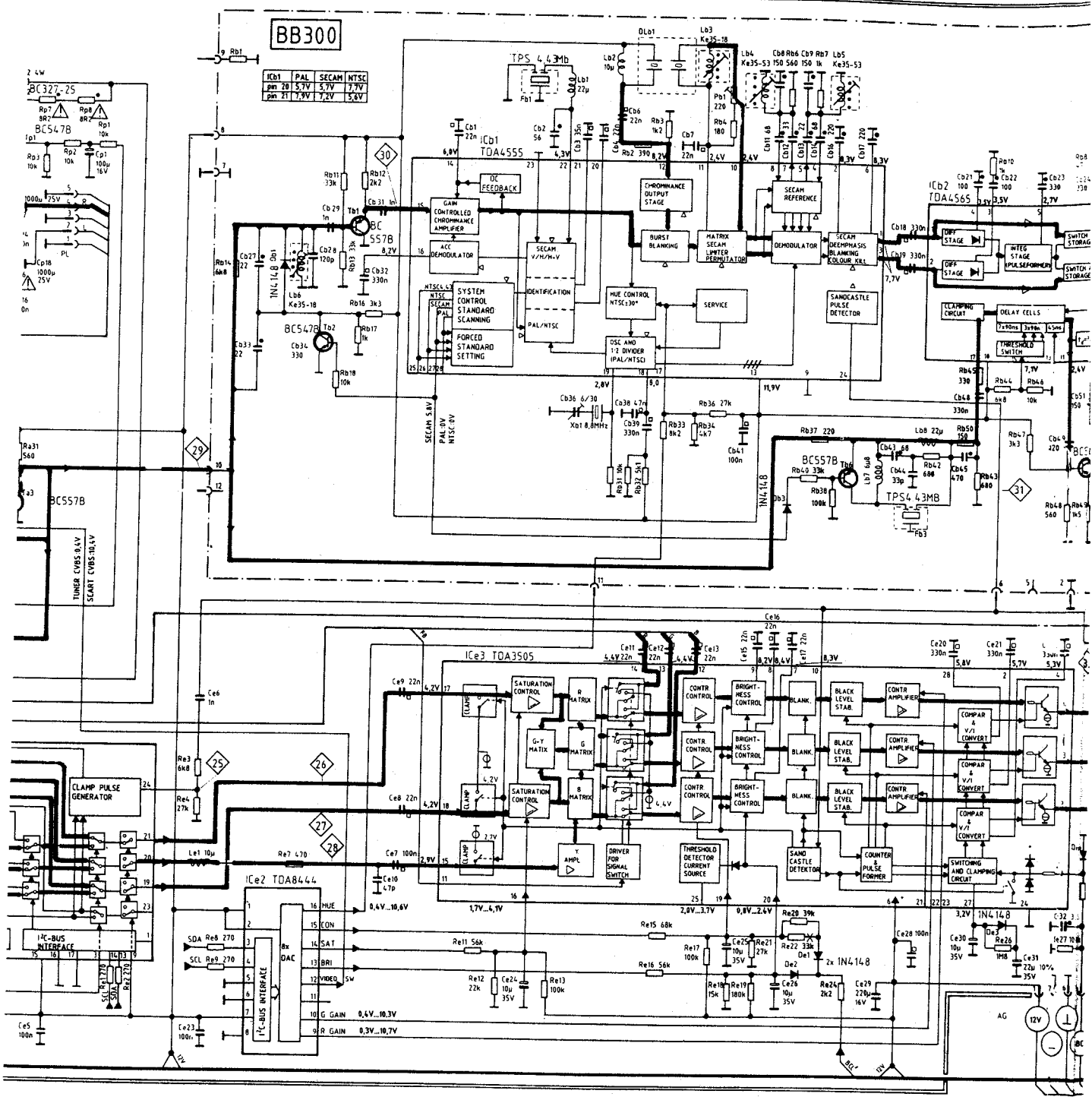
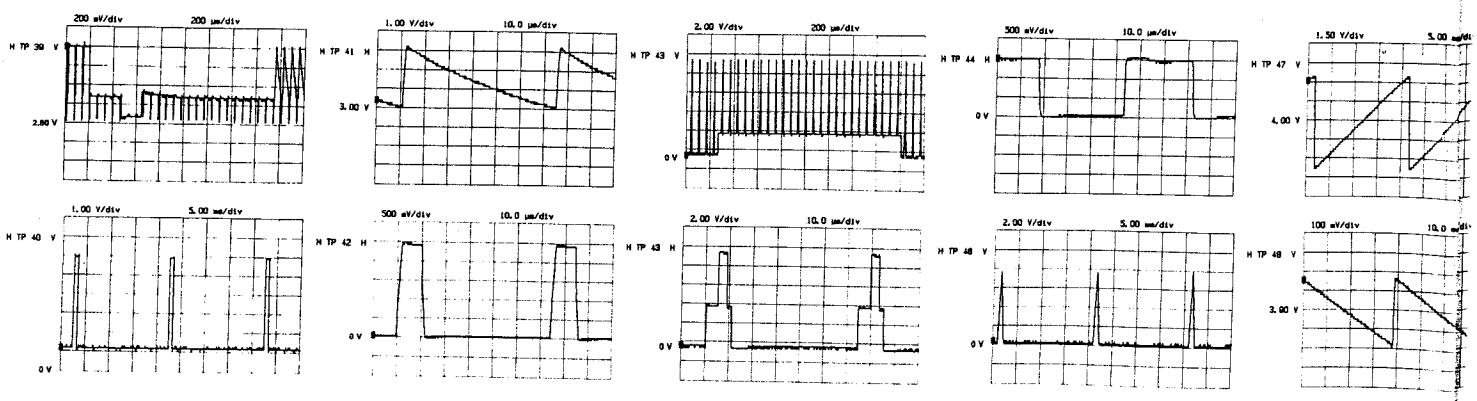
Email:- enquiries@mauritron.co.uk
MAIN BOARD
MAIN BOARD
RGB PROCESSOR
ICd6
ICd3 TL322
ICd1 TDA8420
ICp1 TDA4935
ICe1 TDA8443A
BD241
BC327-25
BC547B
BC557B
SUPPLY
VOL BAL
I²C-BUS INTERFACE
PSEUDO
SPATIAL
BASS
TREB
SATELLITE
TX-REC
TELETEXT
CLAMP
MATRIX
S-SEL
CVBS
SCART RGB
12V STBY
P-ON
S-ON
MODE 1
MODE 2
RGB INV
HOLD
SAT REC
CONTINUED AT "A"



RGB PROCESSOR



COLOUR DECODER MODULE

SYNC/ DEFLECTION PROCESSOR

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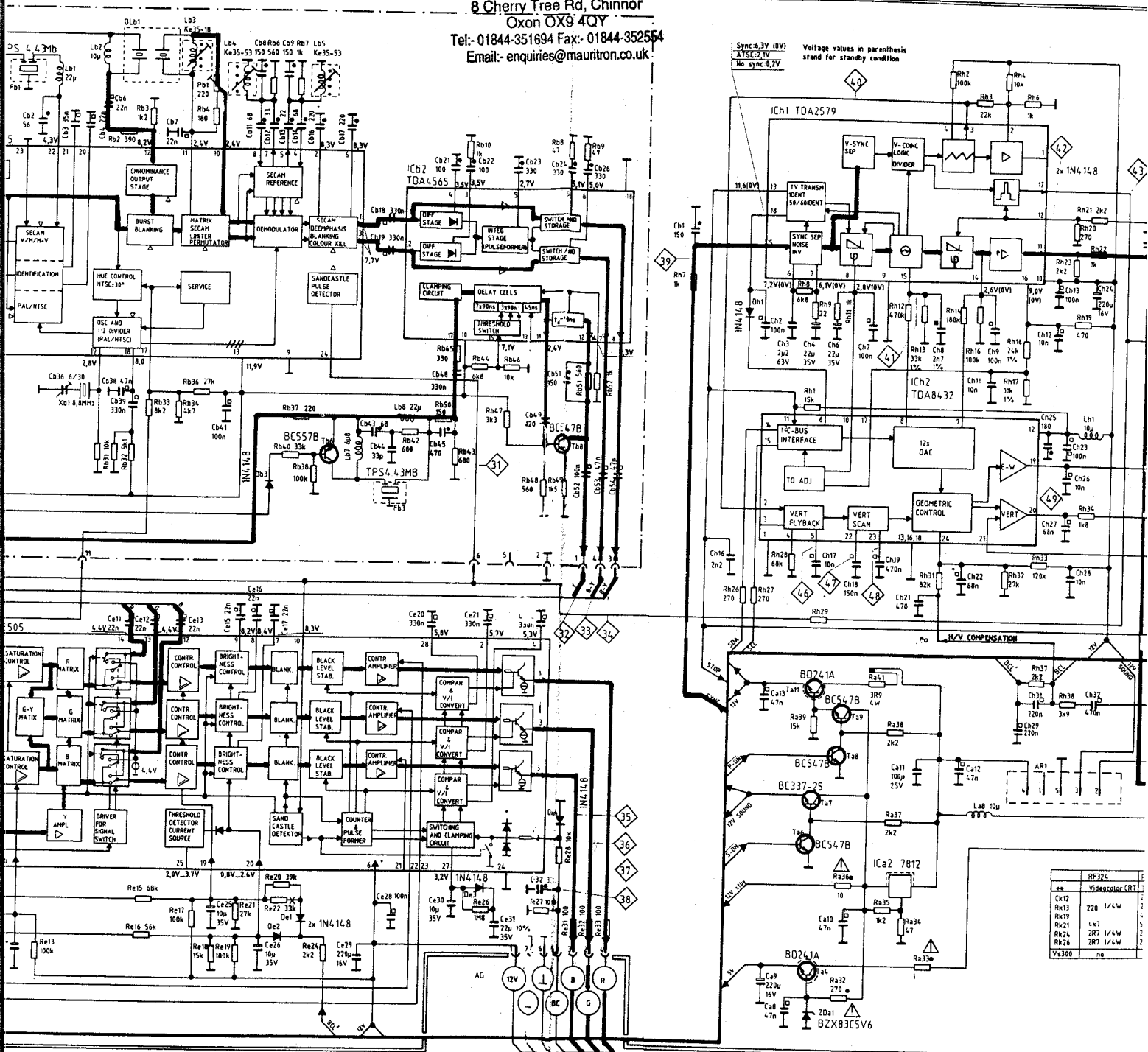
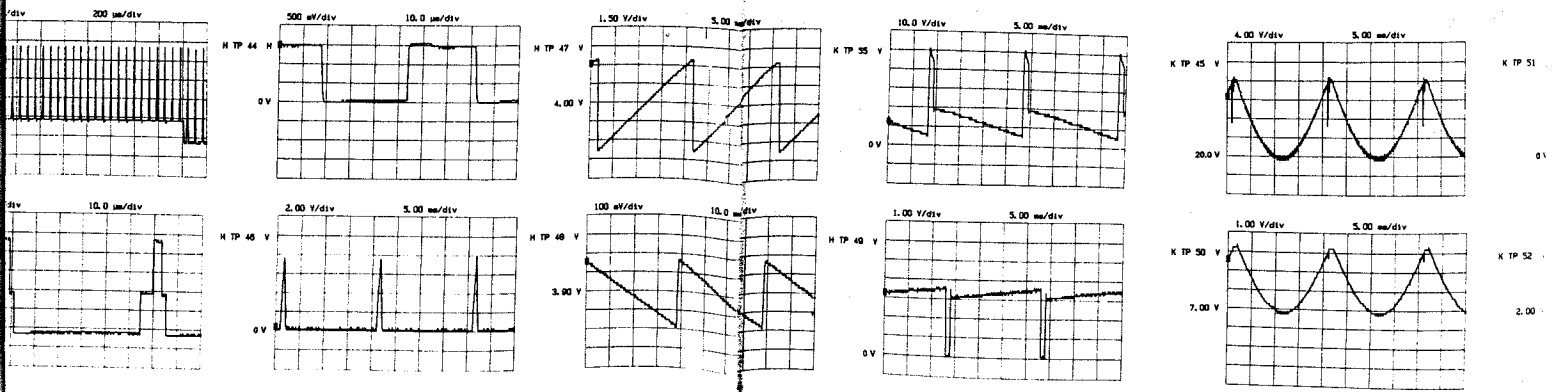
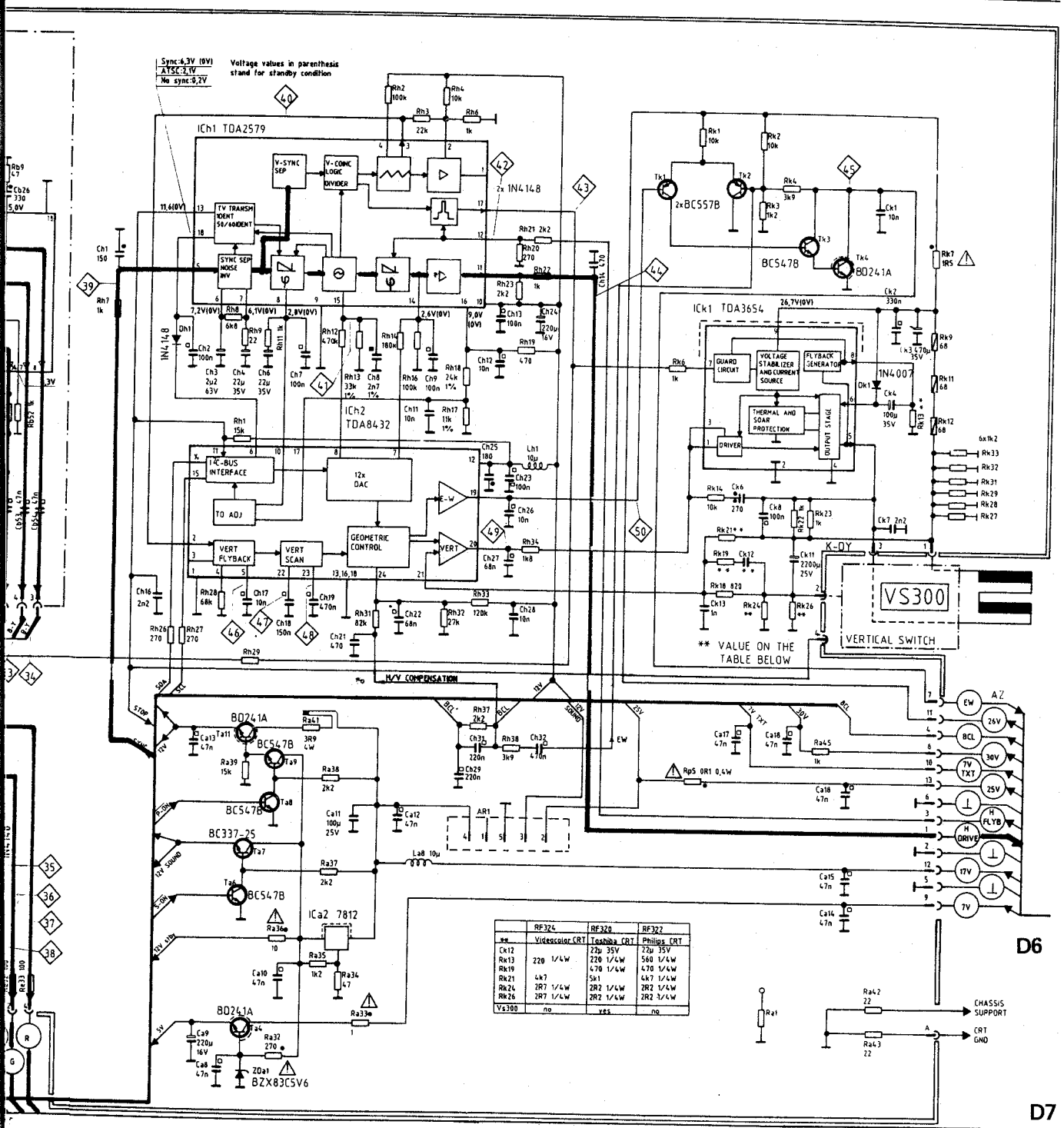


	RF324
ee	Videocolor CRT
Ck12	
Rk13	220 1/4W
Rk19	
Rk21	4k7
Rk24	2R7 1/4W
Rk26	2R7 1/4W
Vs300	no

OCESSOR

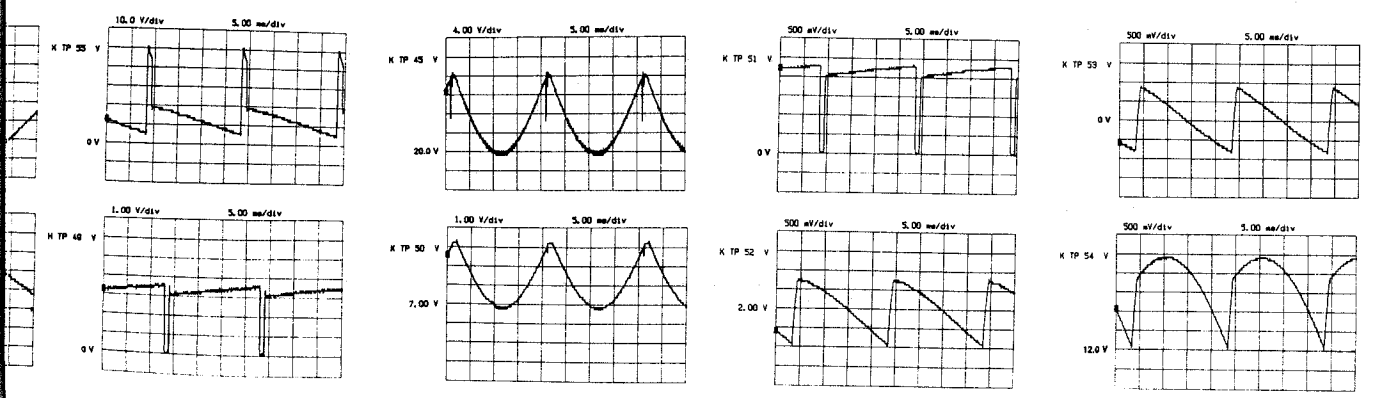
MAIN BO/





**	RF324 Videocolor CRT	RF320 Toshiba CRT	RF322 Philips CRT
Ck12		22µ 35V	22µ 35V
Rk13	220 1/4W	220 1/4W	560 1/4W
Rk19		470 1/4W	470 1/4W
Rk21	4k7	5k1	4k7 1/4W
Rk24	2R7 1/4W	2R2 1/4W	2R2 1/4W
Rk26	2R7 1/4W	2R2 1/4W	2R2 1/4W
Vs300	no	yes	no

MAIN BOARD



MOUNTING INSTRUCTIONS OF S-VHS

S-VHS CONNECTION KIT
(Order No.: 03500800)

Contents

The connection kit includes following components:

Item	Description	Order No
Colour decoder module		BB 303
S-VHS connection unit		LL 302
S-VHS adapter		96006355
3-pole PCB-connector		51005731
ICf1	X2402P	44002625
Cf15	1 nF, 20%, 63V	23030507
Rf52	1 kΩ, 5%, 0,25W	12114908

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Mounting instructions

1. Switch on the receiver and set it to the service mode. Ask the version number of the NVM (Non-volatile memory ICf1) by pressing the P/C button.
   - Version 02: the SVHS-function is not programmed
   - Version 03: the SVHS-function is already programmed

   If the version number is **02**, perform the mounting according to points 2...9
   If the version number is **03**, perform the mounting according to points 3...6 and 9

2. Read the registered values of all service adjustments made using the remote control hand unit (see service manual of the 3000 series TV receivers) and write them down on the paper. Switch off the receiver and remove the back cover.

3. Remove the connector unit LL300 or LL310 and replace it with the connector unit LL302 supplied in the kit.

4. Remove the colour decoder module BB300 or BB301 and replace it with the module BB303 supplied in the kit.

5. If needed, mount the 3-pole PCB-connector supplied in the kit into place reserved for the 9-pole AS-connector. The 3-pole connector must be mounted so that only pins AS 3, 4, and 5 are used (see Fig. 1)

6. Connect the cable connectors BL and AS as shown in Fig. 2.

7. Remove the control unit Fc of the receiver and check the etching code of the board. If ithe etching code is 90505065 replace the components ICf1, Cf15 and Rf52 with the corresponding components supplied in the kit (ICf1 = X2402P, Cf15 = 1 nF, Rf52 = 1 k). Fit the resistor Rf52 to the print side so that the end previously connected to pin 7 of the microprocessor (ICf2) becomes connected to pin 5. Mount the control unit back to its place. The control unit Fc with etching code 90505452 contains the above-mentioned changes.

8. Switch on the receiver and set it to the service mode. Enter and store the above-mentioned (see item 2) control values into the new NVM-memory (ICf1) using the remote control hand unit.

9. Perform the configuration and store it into memory. Reset the receiver using the mains switch.

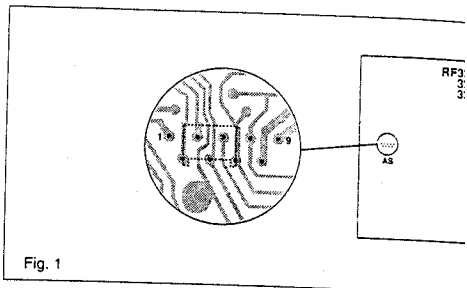


Fig. 1

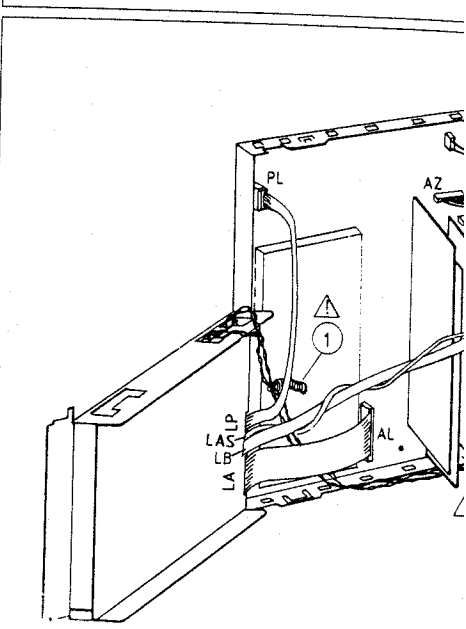
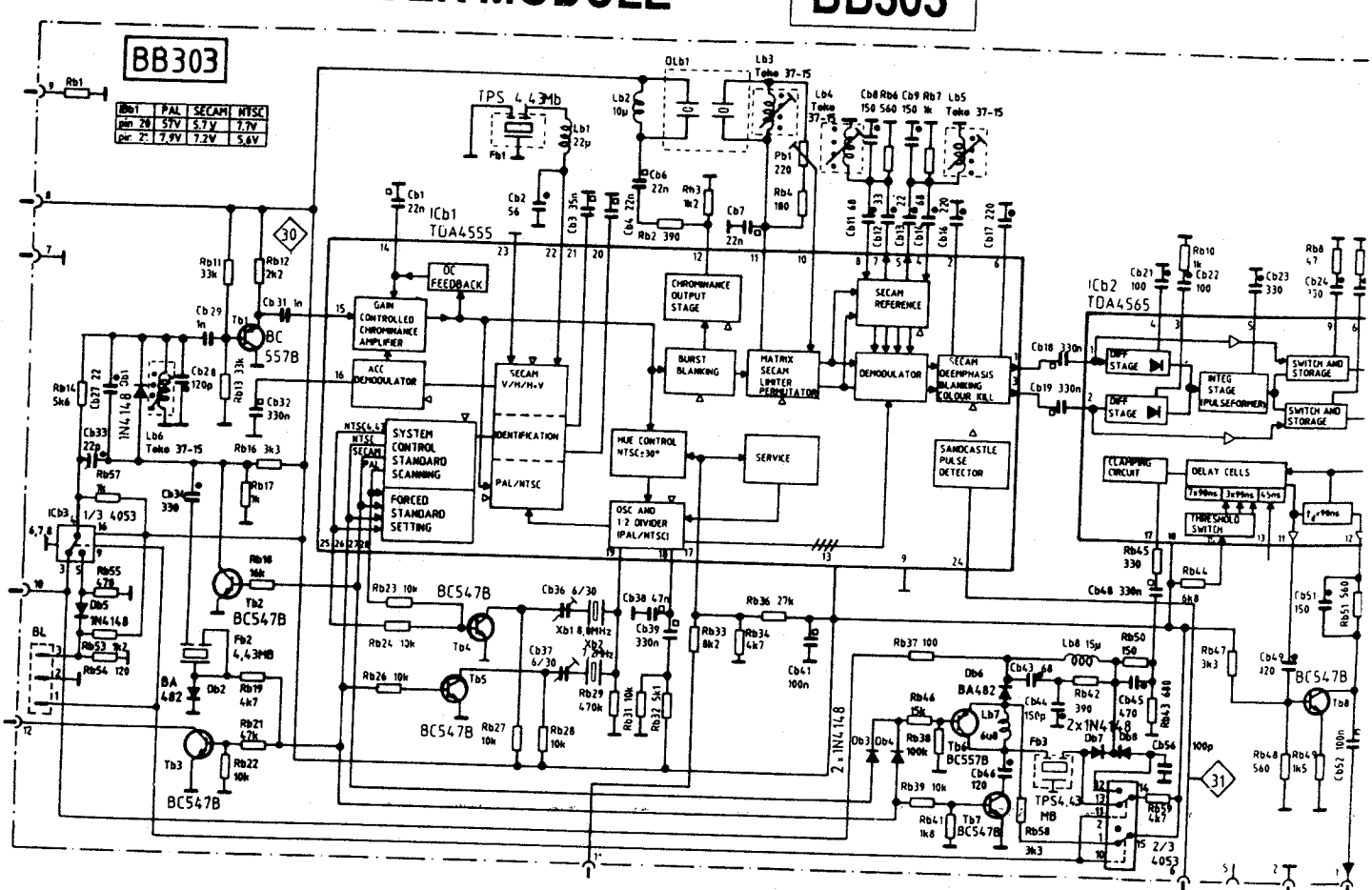


Fig. 2

COLOUR DECODER MODULE BB303



F S-VHS

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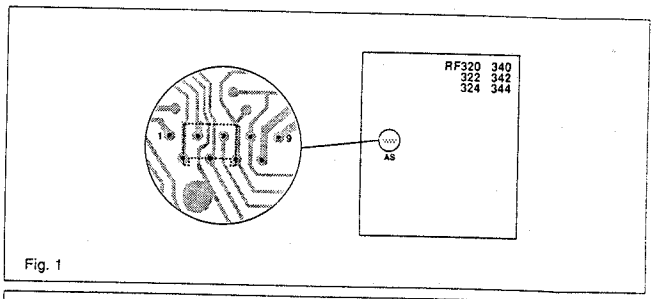


Fig. 1

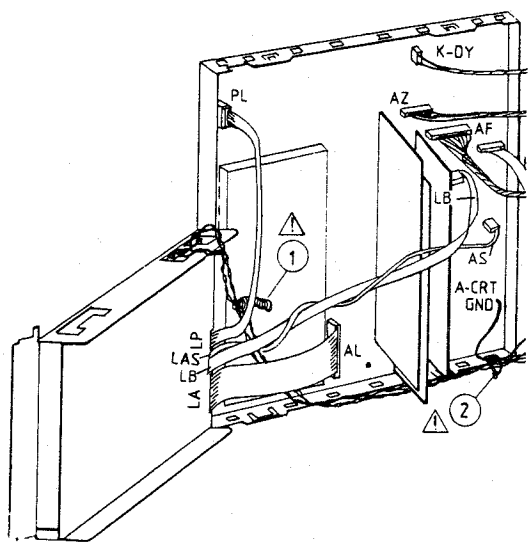
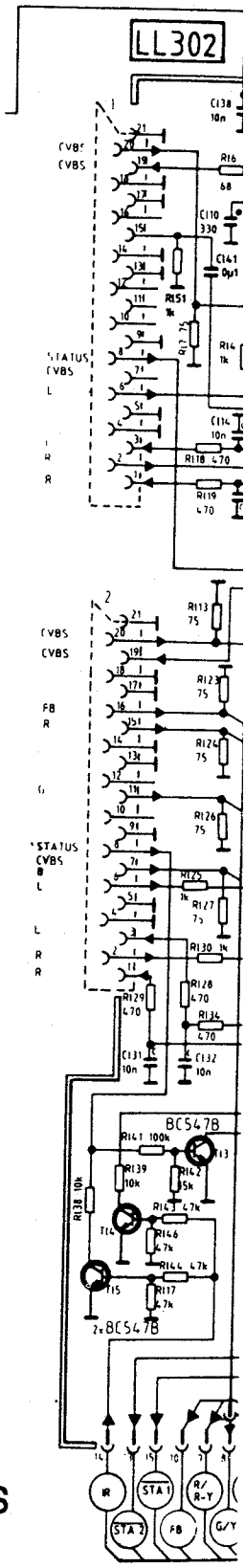
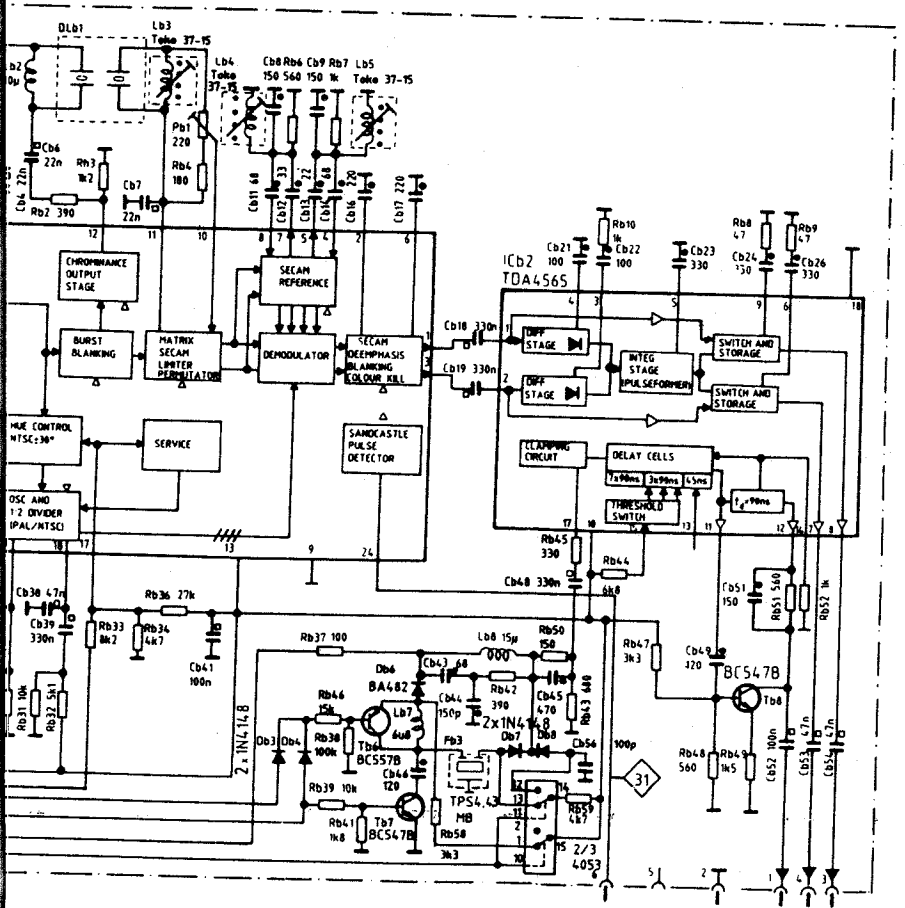


Fig. 2



LE

BB303



SERVICE ADJUSTMENTS

B1. Reference oscillator
Connect a colour bar test signal. Connect pin 17 of ICb1 to the ground. Adjust PAL colours straight with Cb36. Remove the link and check that the colours stay on their own places. Make the same adjustments to the 3,58 MHz NTSC colours with Cb37 (only in module BB303).

B2. PAL-delay demodulator
Connect a colour test chart. Eliminate the "Venetian blind effect" on the colour fields +V and ±U with Pb1, likewise on the colour field +U with Lb3. Repeat the procedure if necessary.

B3. SECAM colour filter
Connect SECAM signal to the aerial inlet. Connect oscilloscope to test point 30 and adjust Lb6 so that pattern is equal.

B4. SECAM demodulator
Connect SECAM signal to the aerial inlet. Connect the oscilloscope to pins 1 and 3 of ICb1. Tune with Lb4 and Lb5 test chart so that uncoloured parts are uncoloured. Remove the measuring cables. Fine-tune colours equal and edges of colours sharp with Lb6.

CONNECTOR UNIT LL302

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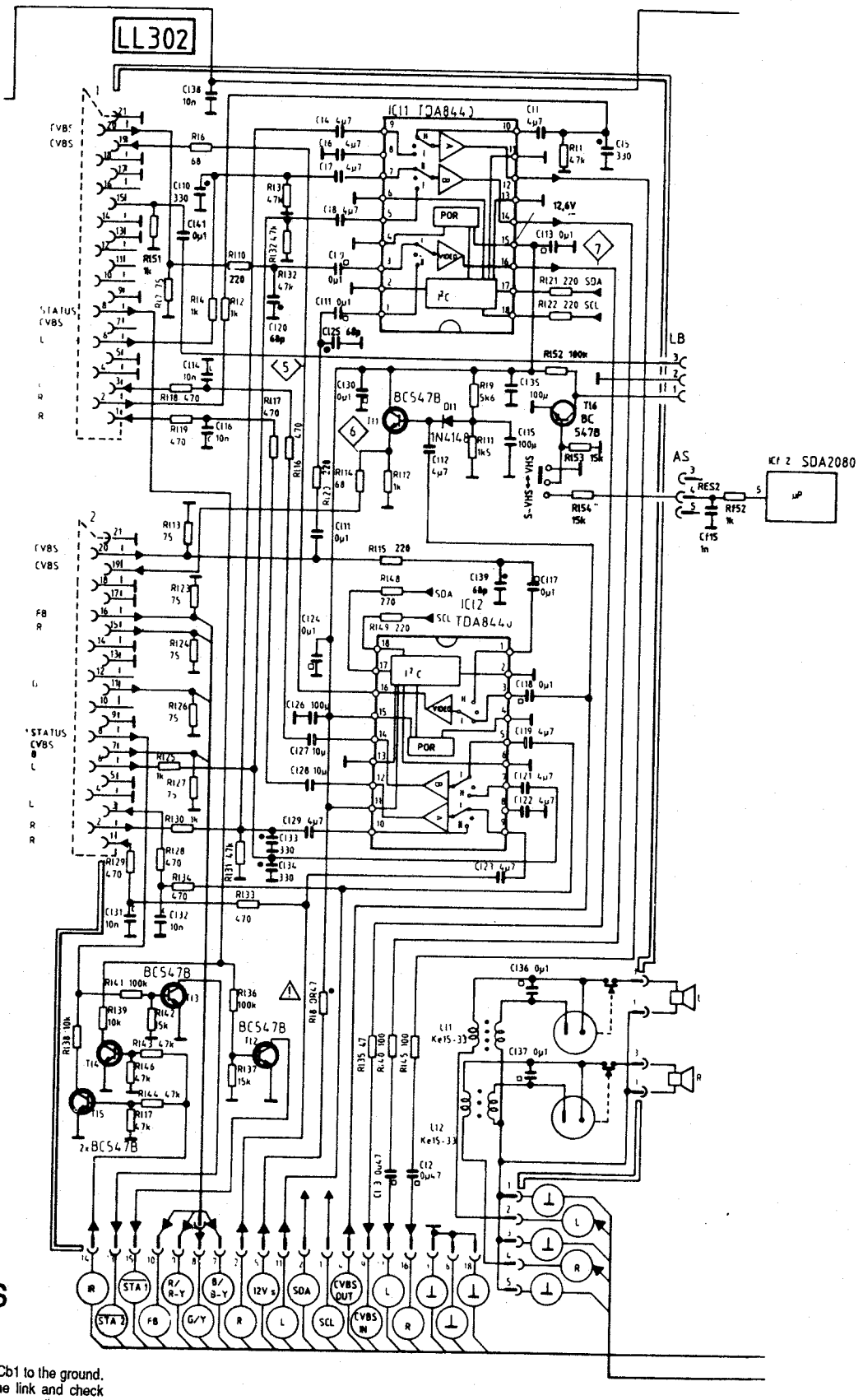

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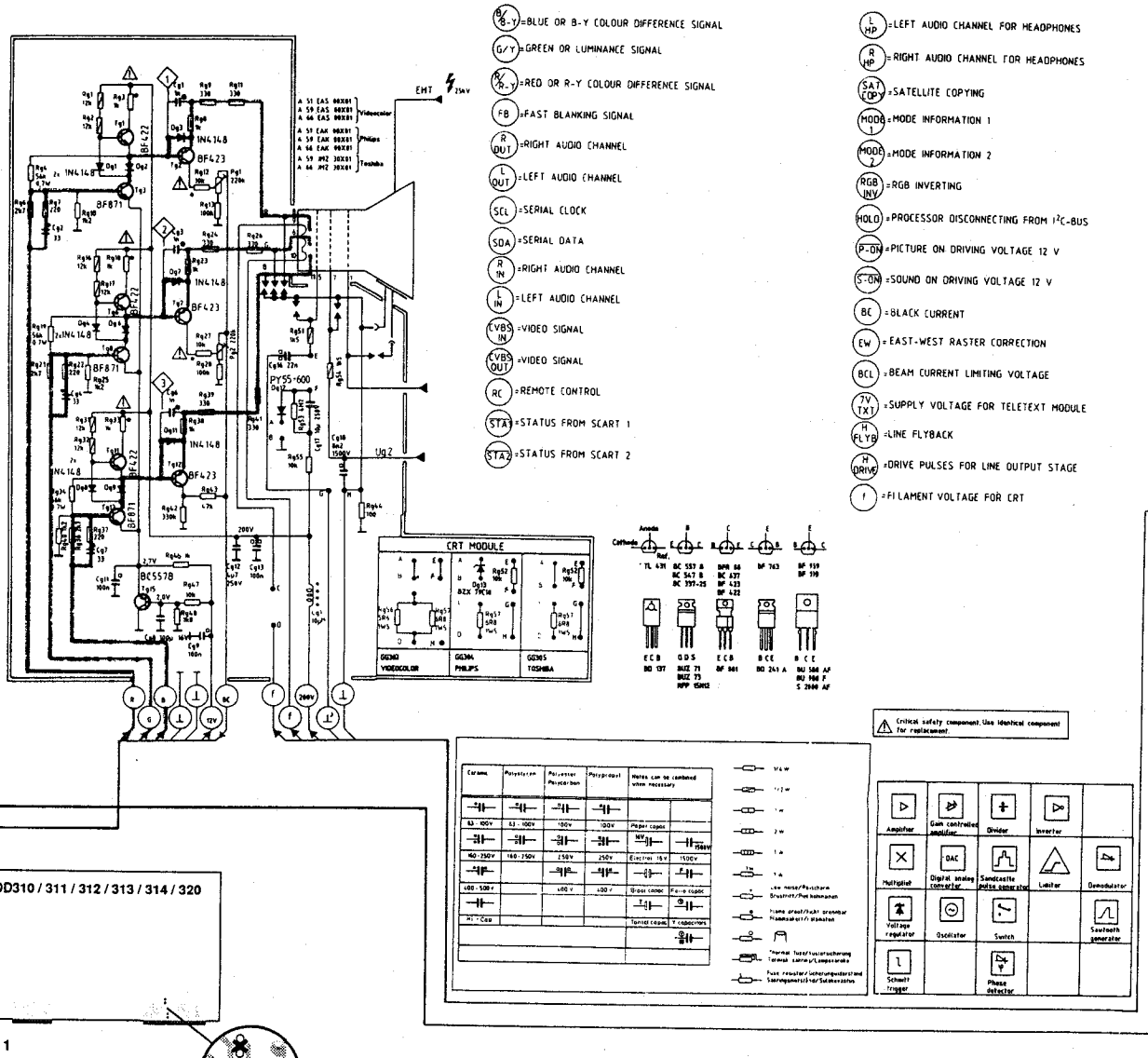
MATRIX

ITEM	SEE MODEL
Power Suppy/Deflection PW300/310/320	FINLUX 3021
VHF Sub Mod 4110	FINLUX 3021
UHF Sub Mod 4110	FINLUX 3021

MOUNTING INSTRUCTIONS OF THE NICAM 728 MODULE

CRT MODULE


B/B-Y =BLUE OR B-Y COLOUR DIFFERENCE SIGNAL
G/Y =GREEN OR LUMINANCE SIGNAL
R/R-Y =RED OR R-Y COLOUR DIFFERENCE SIGNAL
FB =FAST BLANKING SIGNAL
R OUT =RIGHT AUDIO CHANNEL
L OUT =LEFT AUDIO CHANNEL
SCL =SERIAL CLOCK
SDA =SERIAL DATA
R IN =RIGHT AUDIO CHANNEL
L IN =LEFT AUDIO CHANNEL
CVBS IN =VIDEO SIGNAL
CVBS OUT =VIDEO SIGNAL
RC =REMOTE CONTROL
STA1 =STATUS FROM SCART 1
STA2 =STATUS FROM SCART 2
L HP =LEFT AUDIO CHANNEL FOR HEADPHONES
R HP =RIGHT AUDIO CHANNEL FOR HEADPHONES
SAT COPY =SATELLITE COPYING
MODE 1 =MODE INFORMATION 1
MODE 2 =MODE INFORMATION 2
RGB INV =RGB INVERTING
HOLD =PROCESSOR DISCONNECTING FROM I²C-BUS
P-ON =PICTURE ON DRIVING VOLTAGE 12 V
S-ON =SOUND ON DRIVING VOLTAGE 12 V
BC =BLACK CURRENT
EW =EAST-WEST RASTER CORRECTION
BCL =BEAM CURRENT LIMITING VOLTAGE
7V TXT =SUPPLY VOLTAGE FOR TELETEXT MODULE
H FLYB =LINE FLYBACK
H DRIVE =DRIVE PULSES FOR LINE OUTPUT STAGE
f =FILAMENT VOLTAGE FOR CRT
EHT
CRT MODULE
GG362 VIDEOCOLOR
GG364 PHILIPS
GG365 TOSHIBA
D8
D6
D7
D2
D6

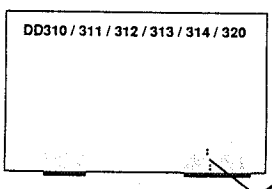


fig. 1

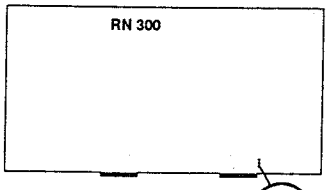


fig. 2

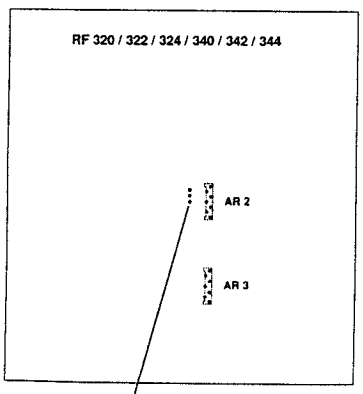


fig. 3

1. a) When mounting the NICAM-sound module to receiver containing the LF sound module (DD310, DD311, DD312, DD313, DD314, DD320), cut off the foils on DD-module as shown in fig 1.

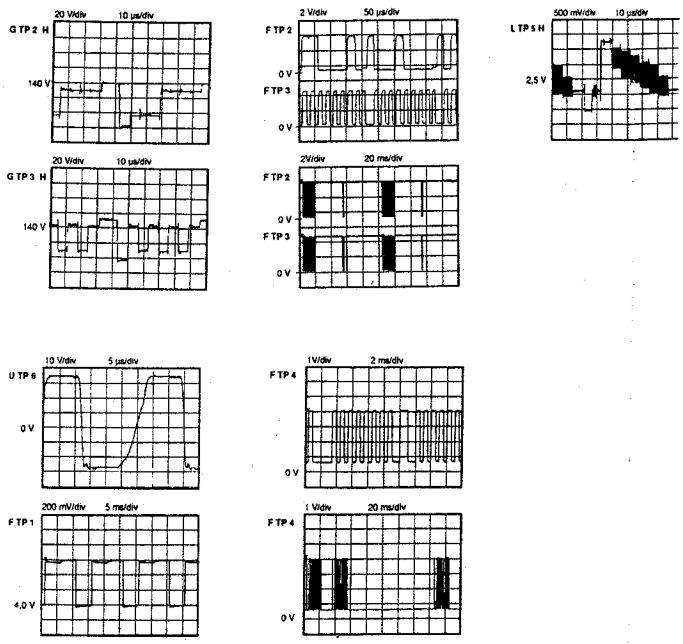
1. b) When mounting the NICAM-module to receiver containing the German A2 standard stereo sound module, cut off the foils on NICAM module as shown in fig. 2.

2. If the RF-block doesn't contain ready-mounted pin contacts AR2 and AR3, mount the contacts as shown in fig. 3.

3. Cut off the foils on RF-block as shown in fig. 3.

4. Mount the NICAM-module on contacts AR2 and AR3.

5. Make an isolating cover on Cd 14 (DD-module) using plastic tape or tube.



E NICAM 728 MODULE

OLOUR DIFFERENCE SIGNAL
NANCE SIGNAL
LOUR DIFFERENCE SIGNAL
SIGNAL
ANNEL
ANNEL
ANNEL
ANNEL
L
CART 1
CART 2

(L HP) = LEFT AUDIO CHANNEL FOR HEADPHONES
(R HP) = RIGHT AUDIO CHANNEL FOR HEADPHONES
(SAT COPY) = SATELLITE COPYING
(MODE 1) = MODE INFORMATION 1
(MODE 2) = MODE INFORMATION 2
(RGB INV) = RGB INVERTING
(HOLD) = PROCESSOR DISCONNECTING FROM I²C-BUS
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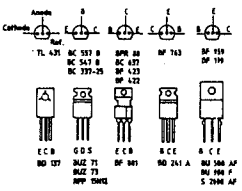
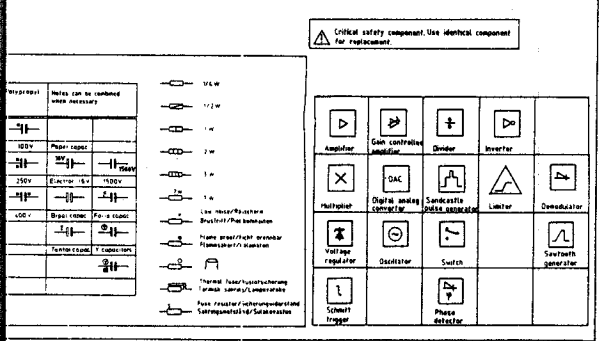
(EW) = EAST-WEST RASTER CORRECTION
(BCL) = BEAM CURRENT LIMITING VOLTAGE
(7V TXT) = SUPPLY VOLTAGE FOR TELETEXT MODULE
(H FLYB) = LINE FLYBACK
(H DRIVE) = DRIVE PULSES FOR LINE OUTPUT STAGE
(F) = FILAMENT VOLTAGE FOR CRT



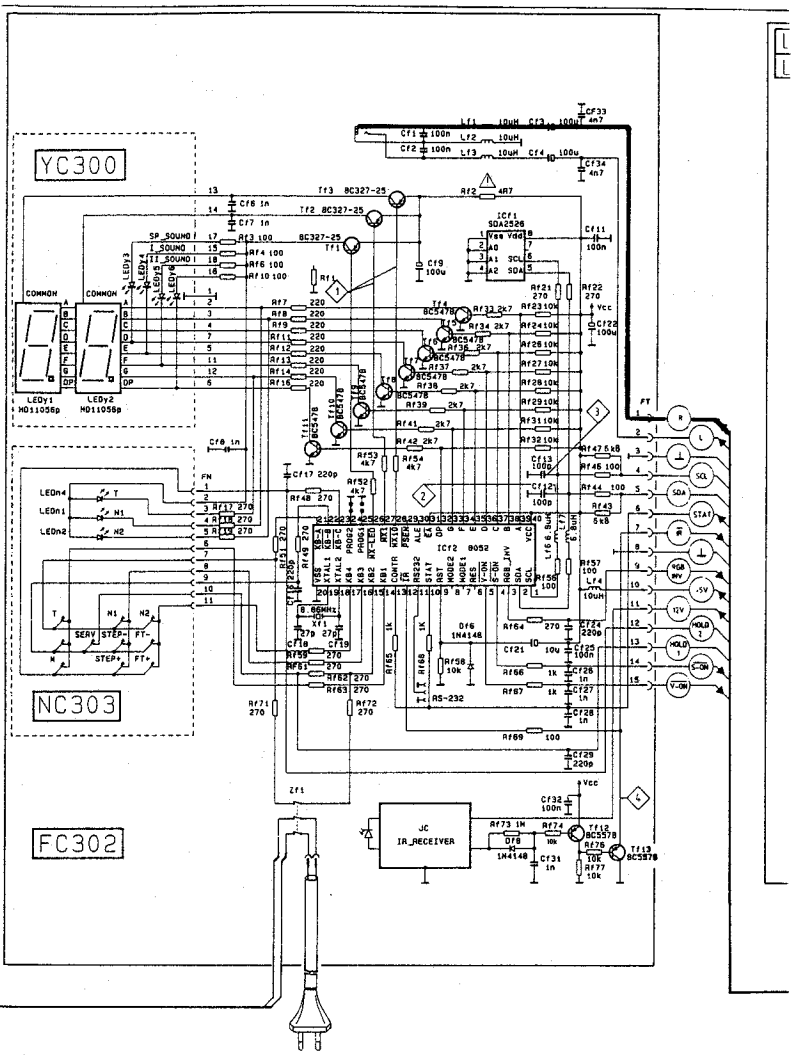


D8

D6

D2

CONTROL UNIT



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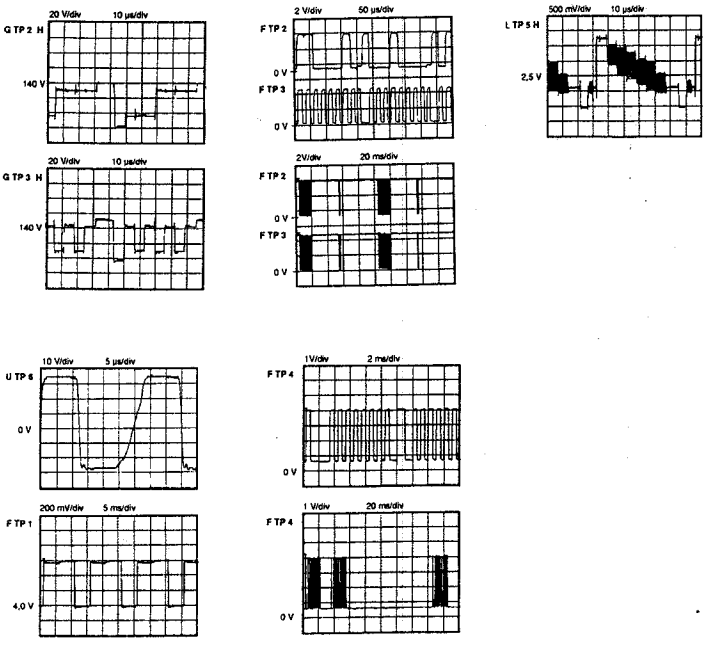
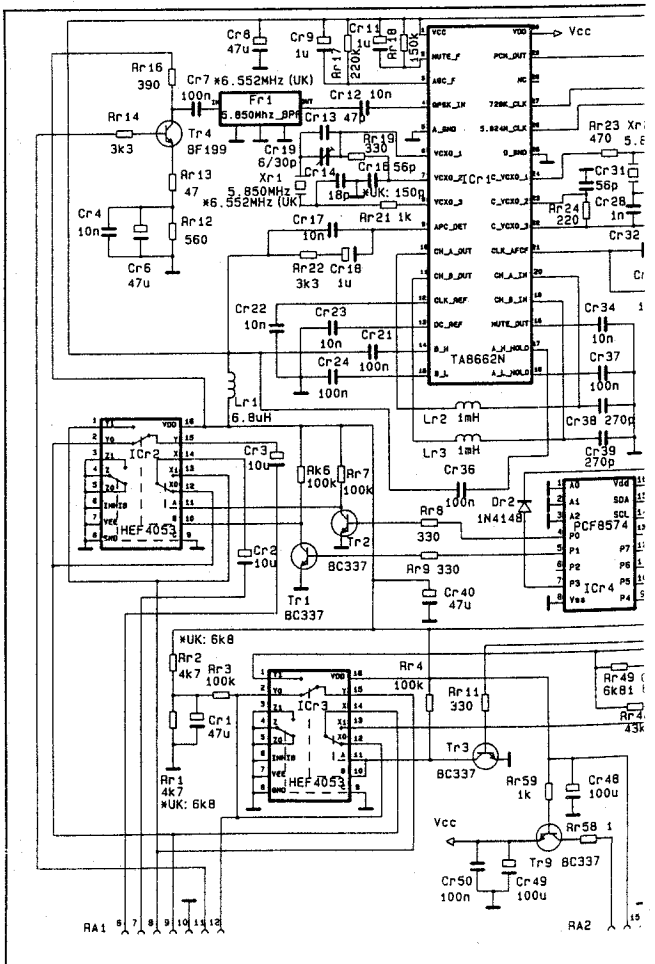
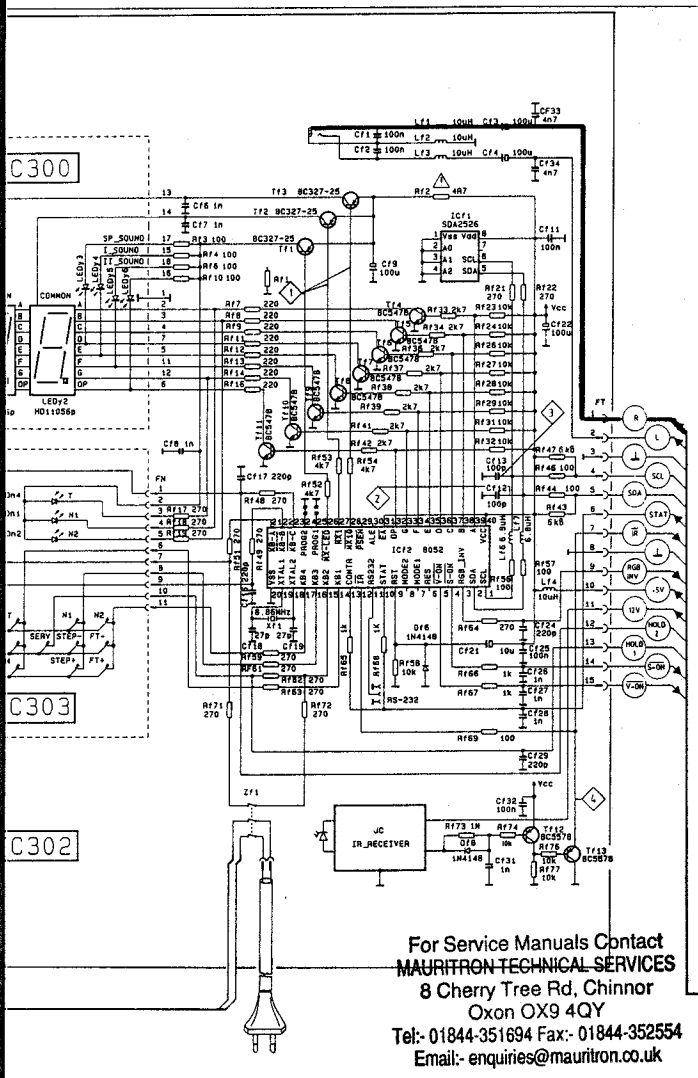
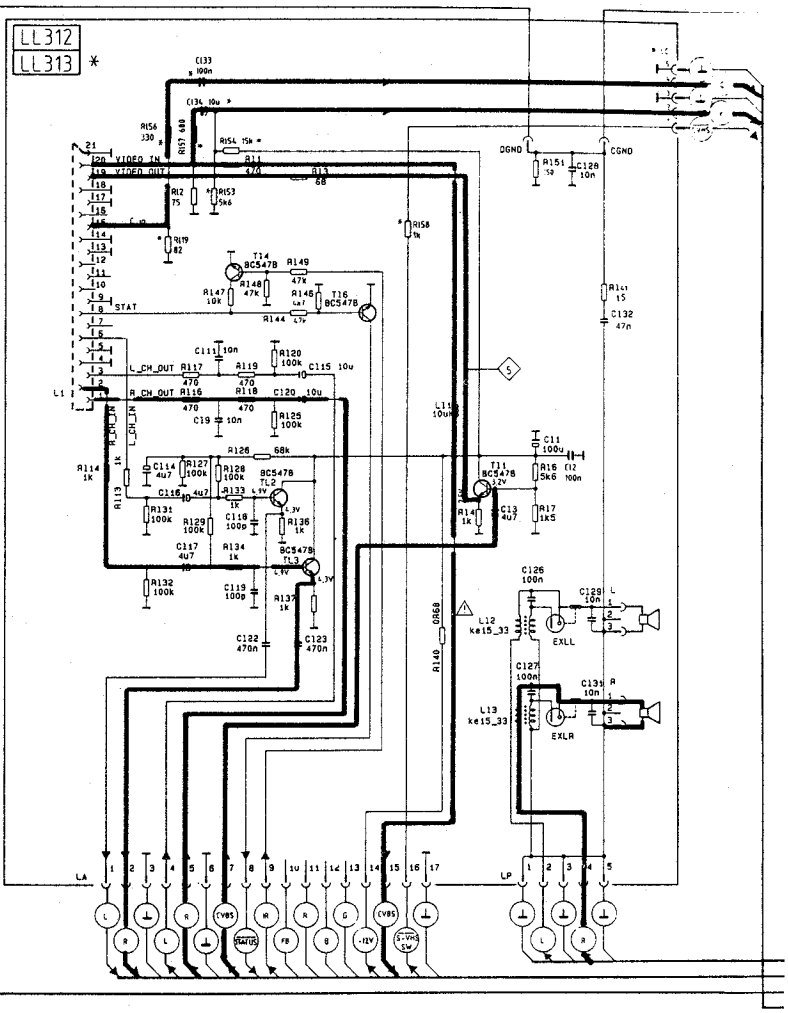




CONTROL UNIT

CONNECTOR UNIT





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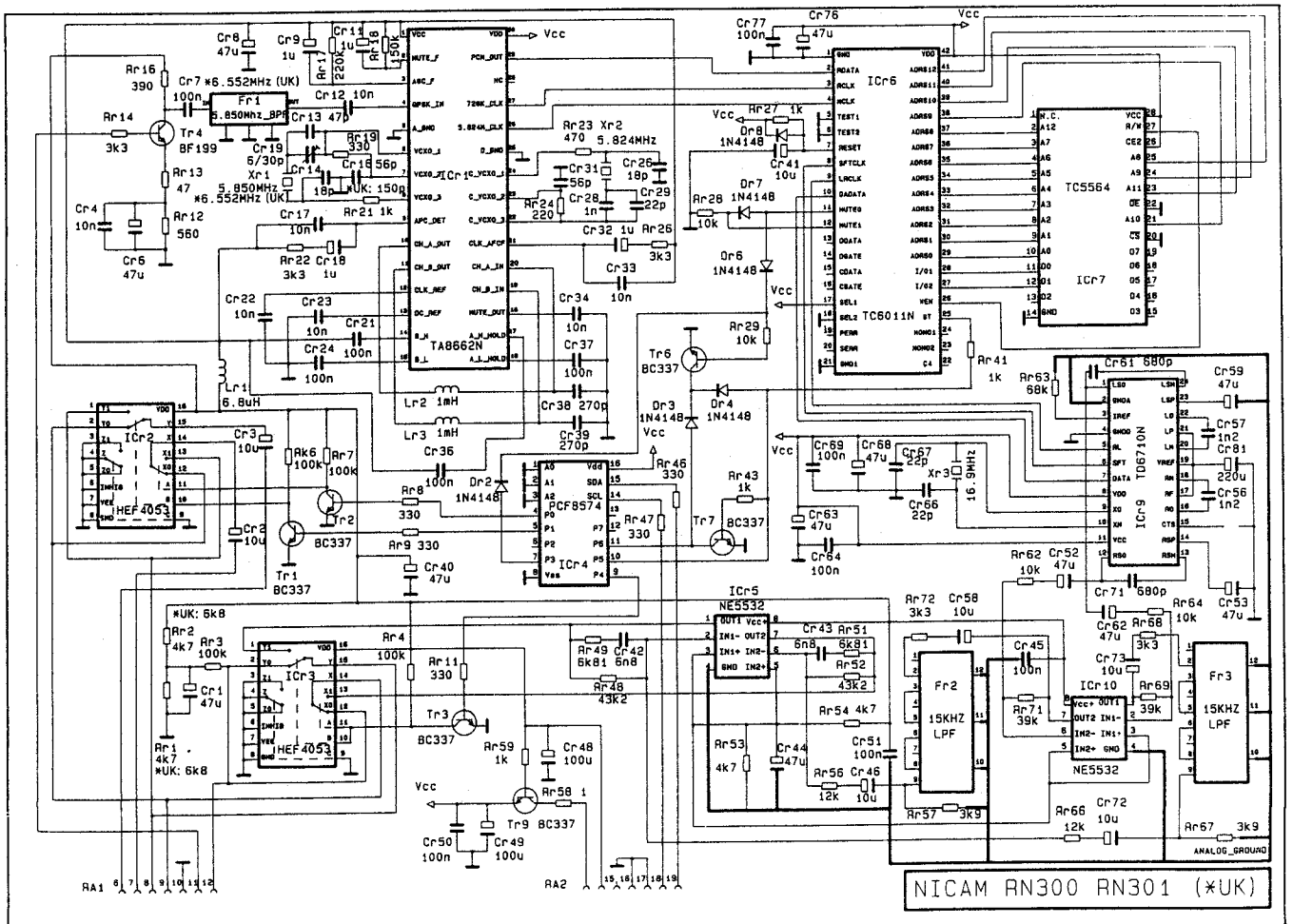
NICAM MODULE RN300 RN301



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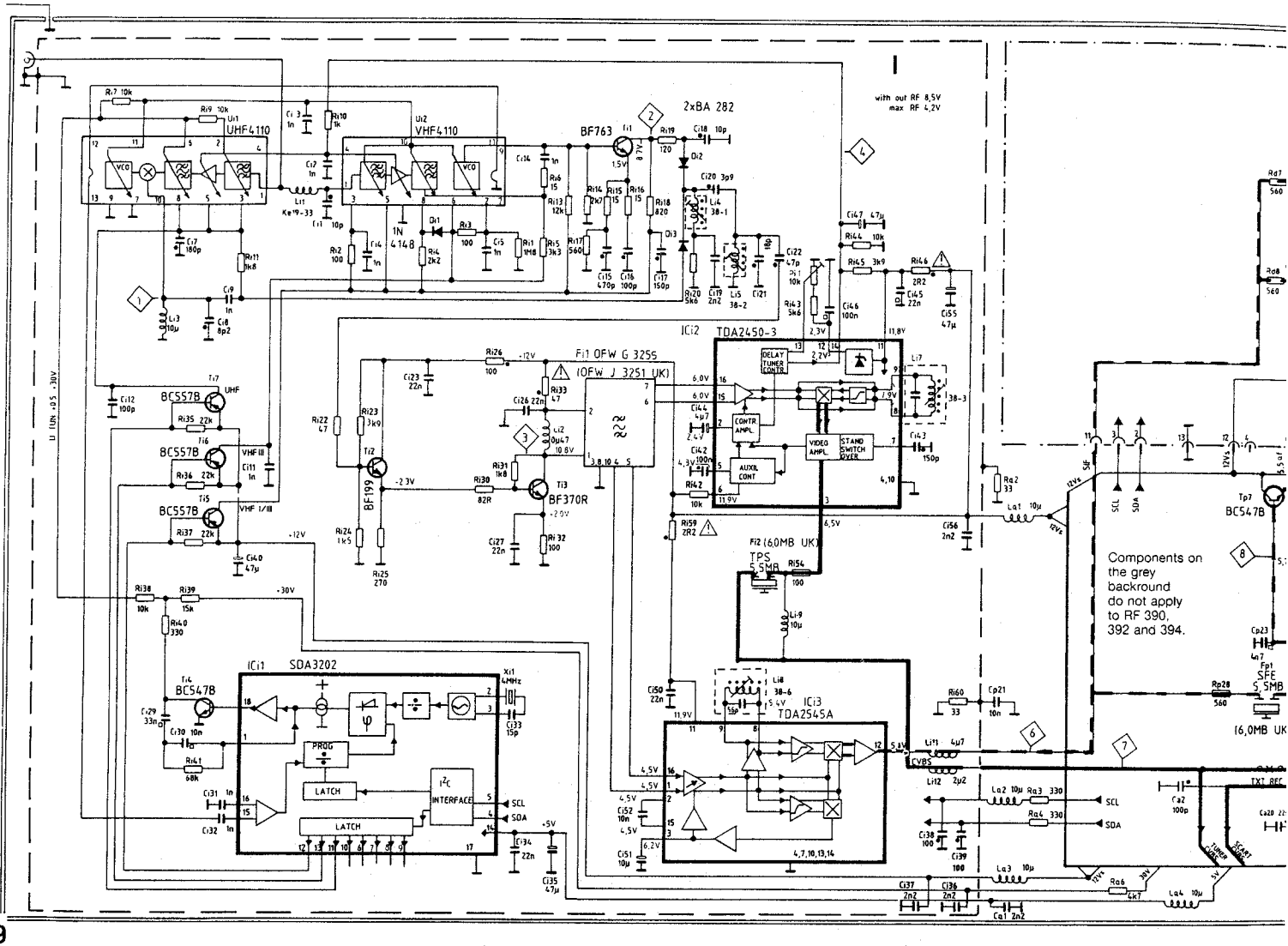
TUNER UNIT



D9
D10
D11
D12

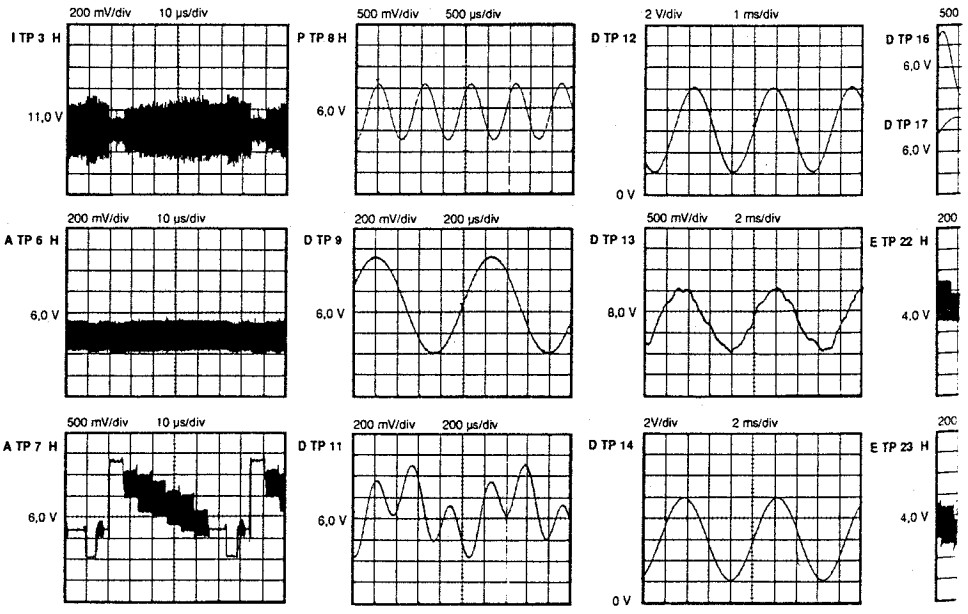
TYPES	MODELS
3624V	1AC
3628E	1AC
3624E	1AC
3628M	1AC
3624M	1AC
3628P	1AC
3624P	1AC
3621F	1AC

TYPES	MODELS
3624V	1BC
3628E	1BC
3624E	1BC
3628M	1BC
3624M	1BC
3628P	1BC
3624P	1BC
3621F	1BC

TYPES	MODELS
3624V	1GC
3628E	1GC
3624E	1GC
3628M	1GC
3624M	1GC
3628P	1GC
3624P	1GC
3621F	1GC

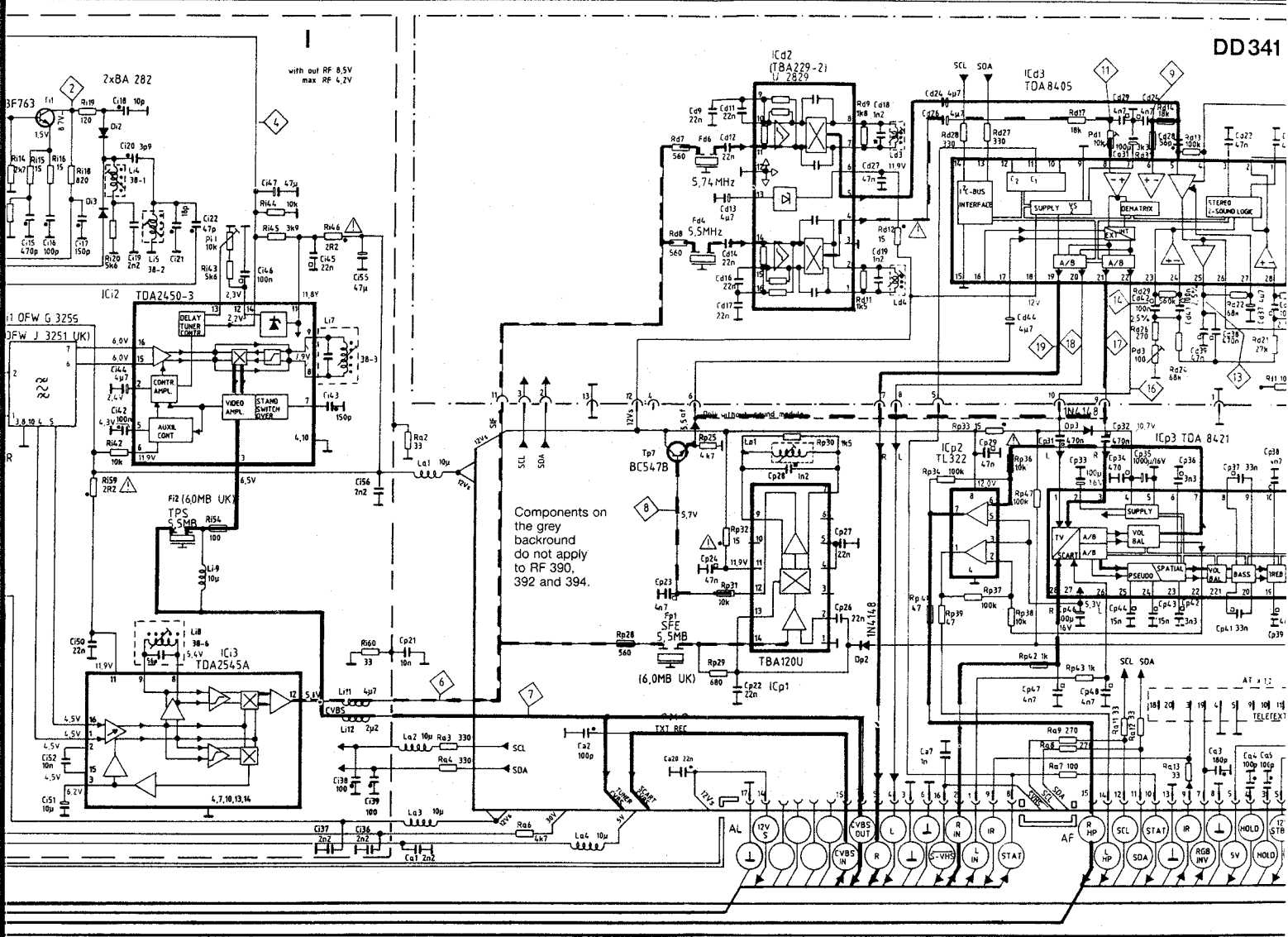
TYPES	MODELS
3624V	1NC
3628E	1NC
3624E	1NC
3628M	1NC
3624M	1NC
3628P	1NC
3624P	1NC
3621F	1NC

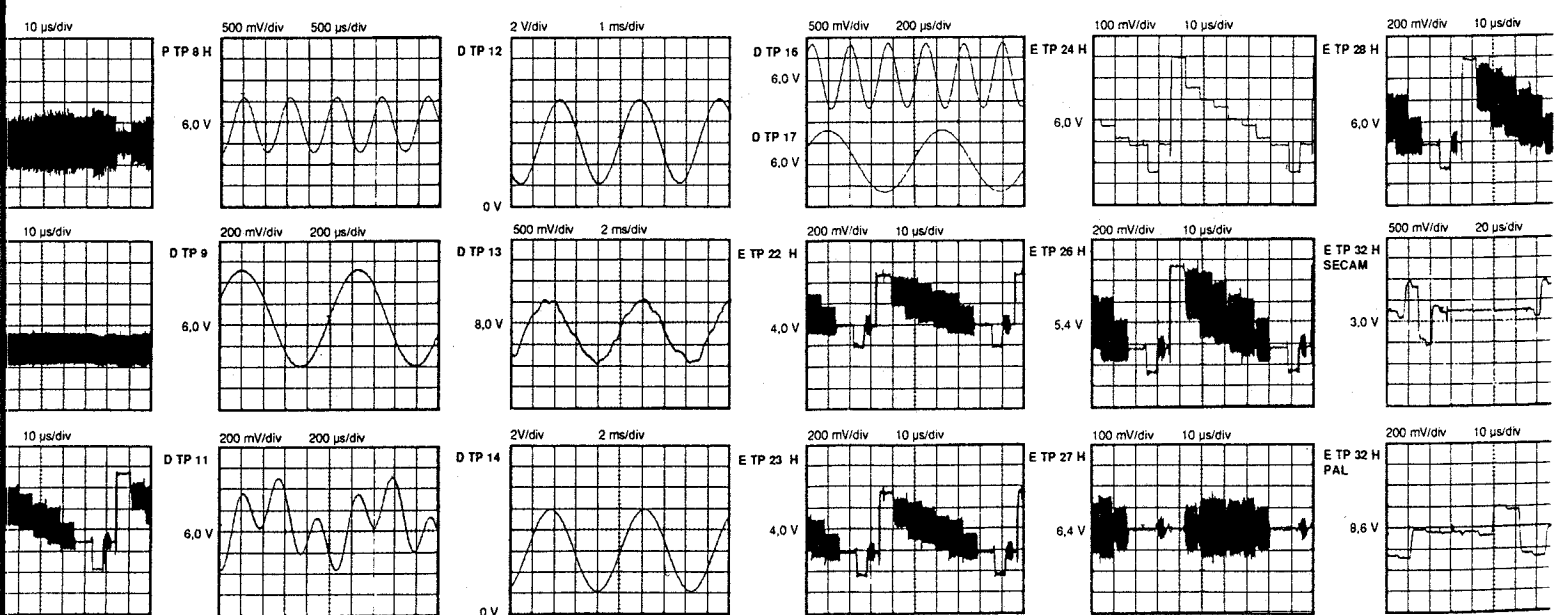
TYPES	MODELS
3624V	1DC
3628E	1DC
3624E	1DC
3628M	1DC
3624M	1DC
3628P	1DC
3624P	1DC
3621F	1DC



83601440

SOUND MODULE





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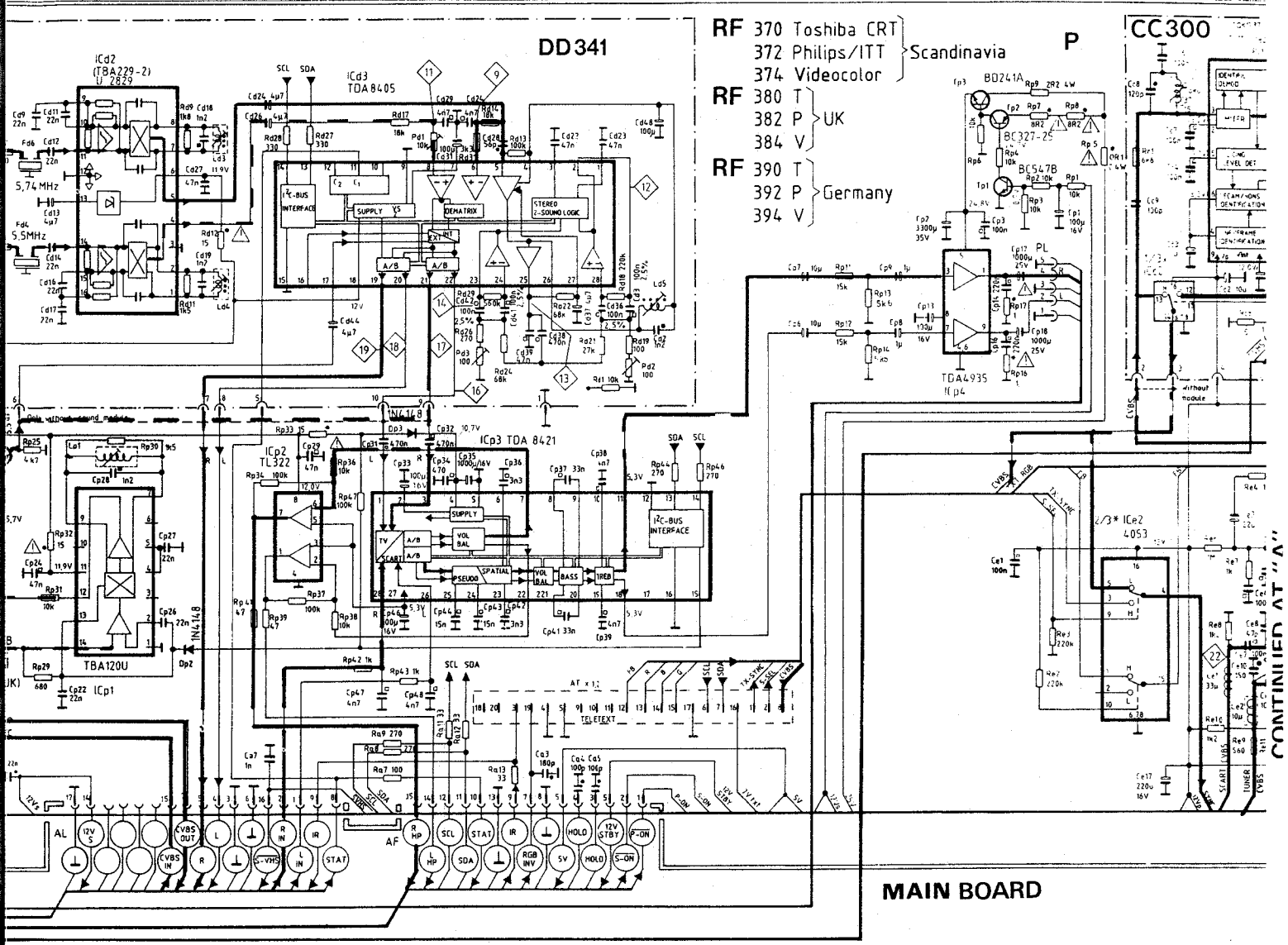
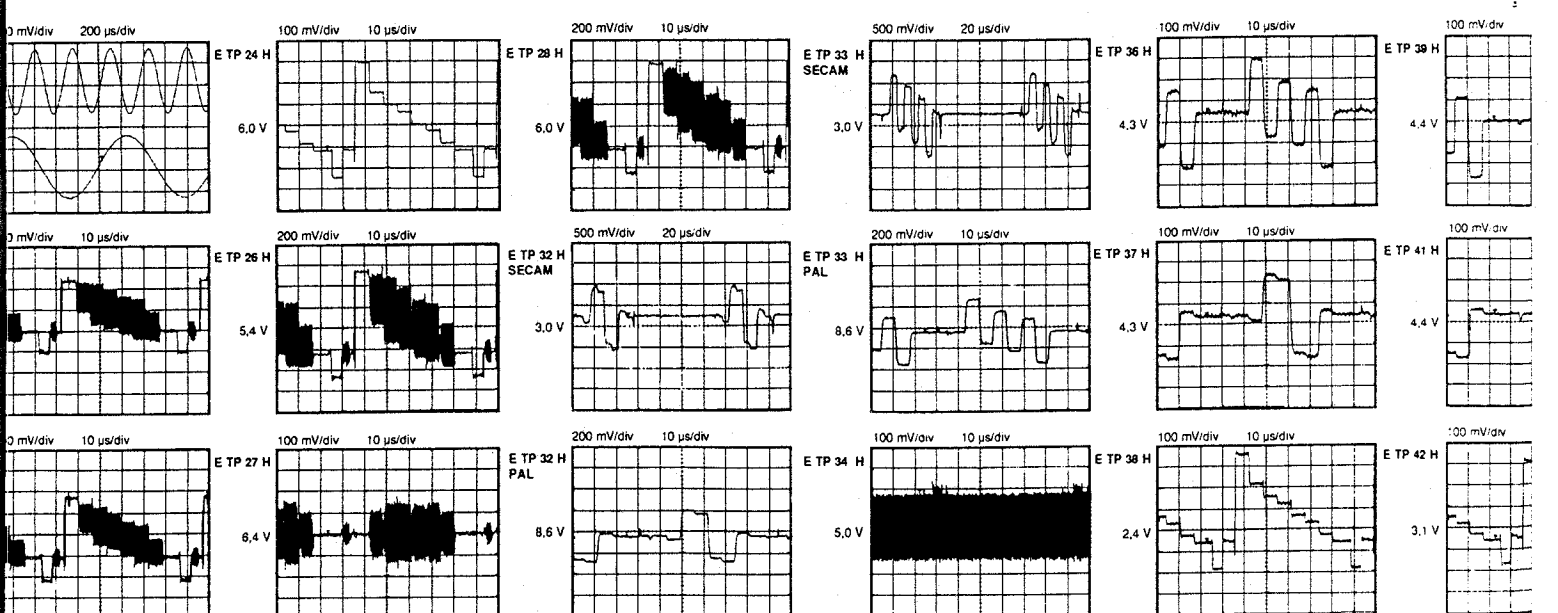
SOUND MODULE

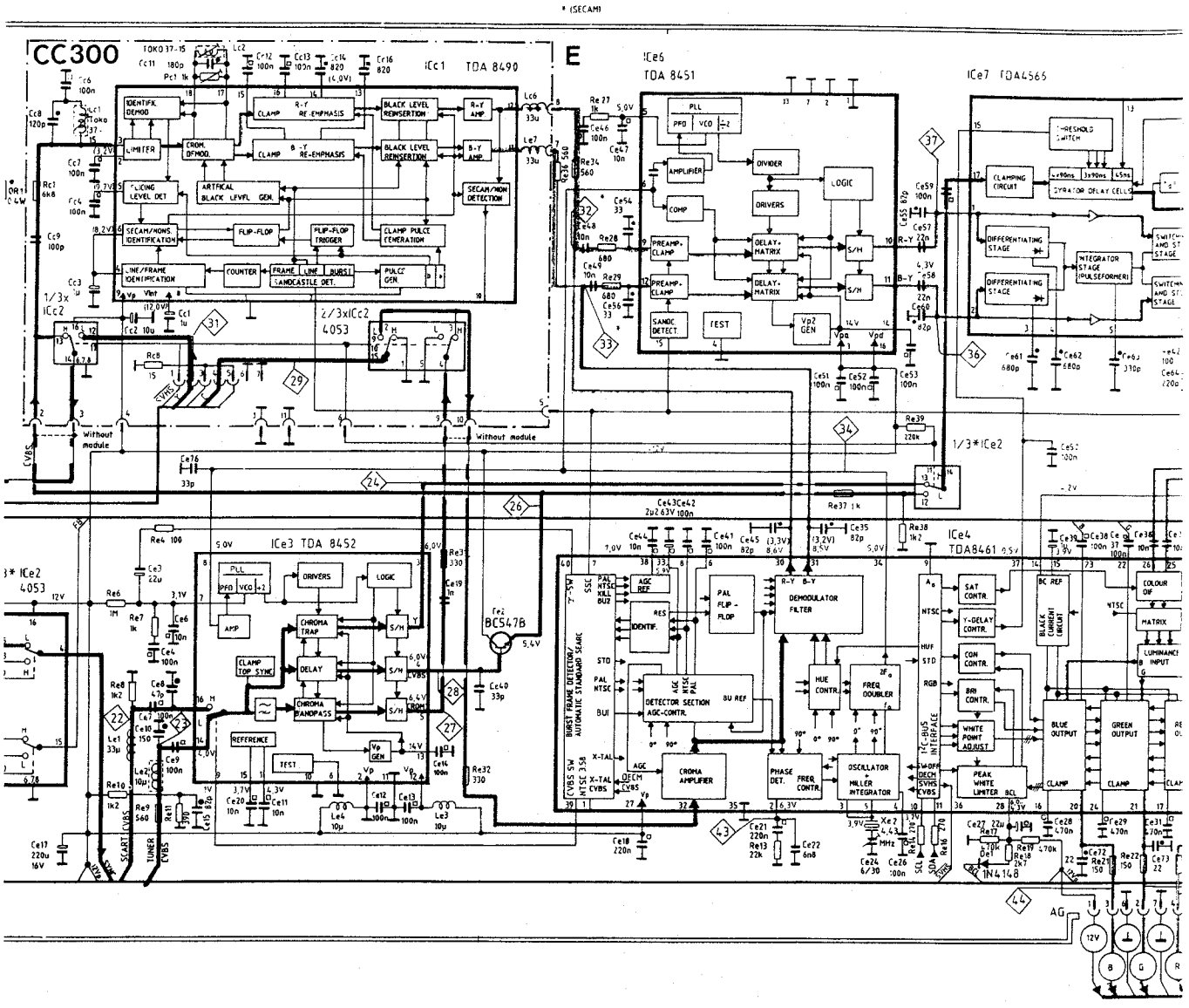
AUDIO AMPLIFIER

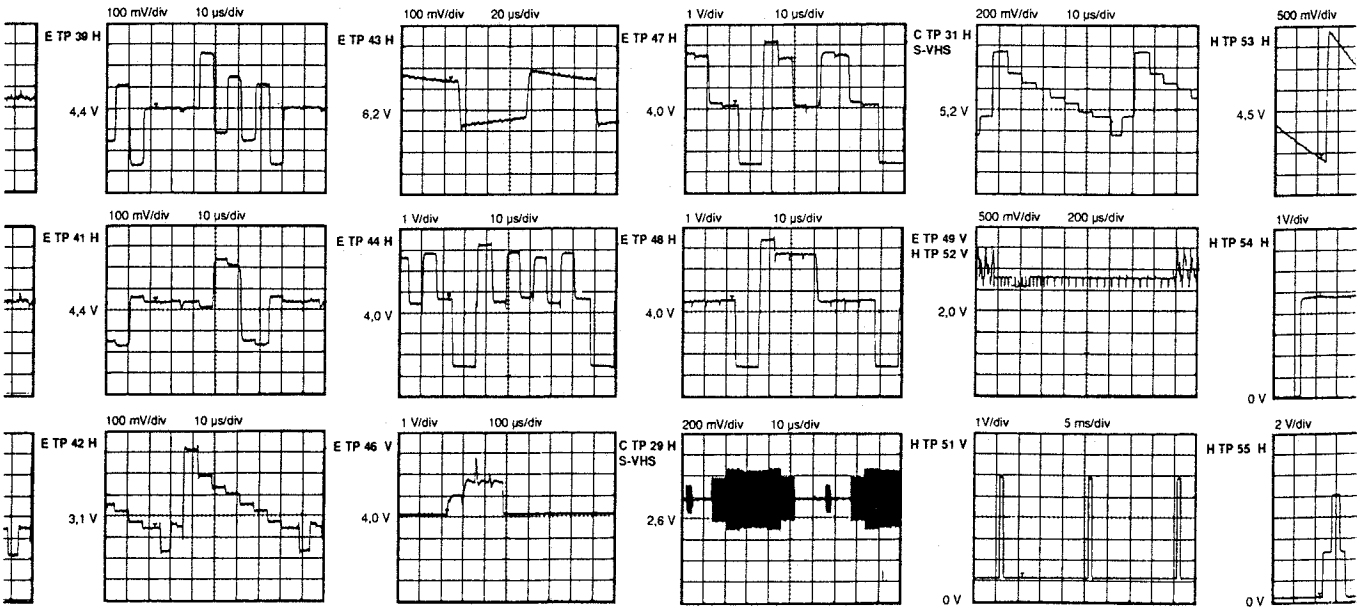




SECAM MODULE

LUMINANCE AND CHROMINANCE




E TP 39 H
E TP 43 H
E TP 47 H
C TP 31 H S-VHS
H TP 53 H
E TP 41 H
E TP 44 H
E TP 48 H
E TP 49 V
H TP 52 V
H TP 54 H
E TP 42 H
E TP 46 V
C TP 29 H S-VHS
H TP 51 V
H TP 55 H

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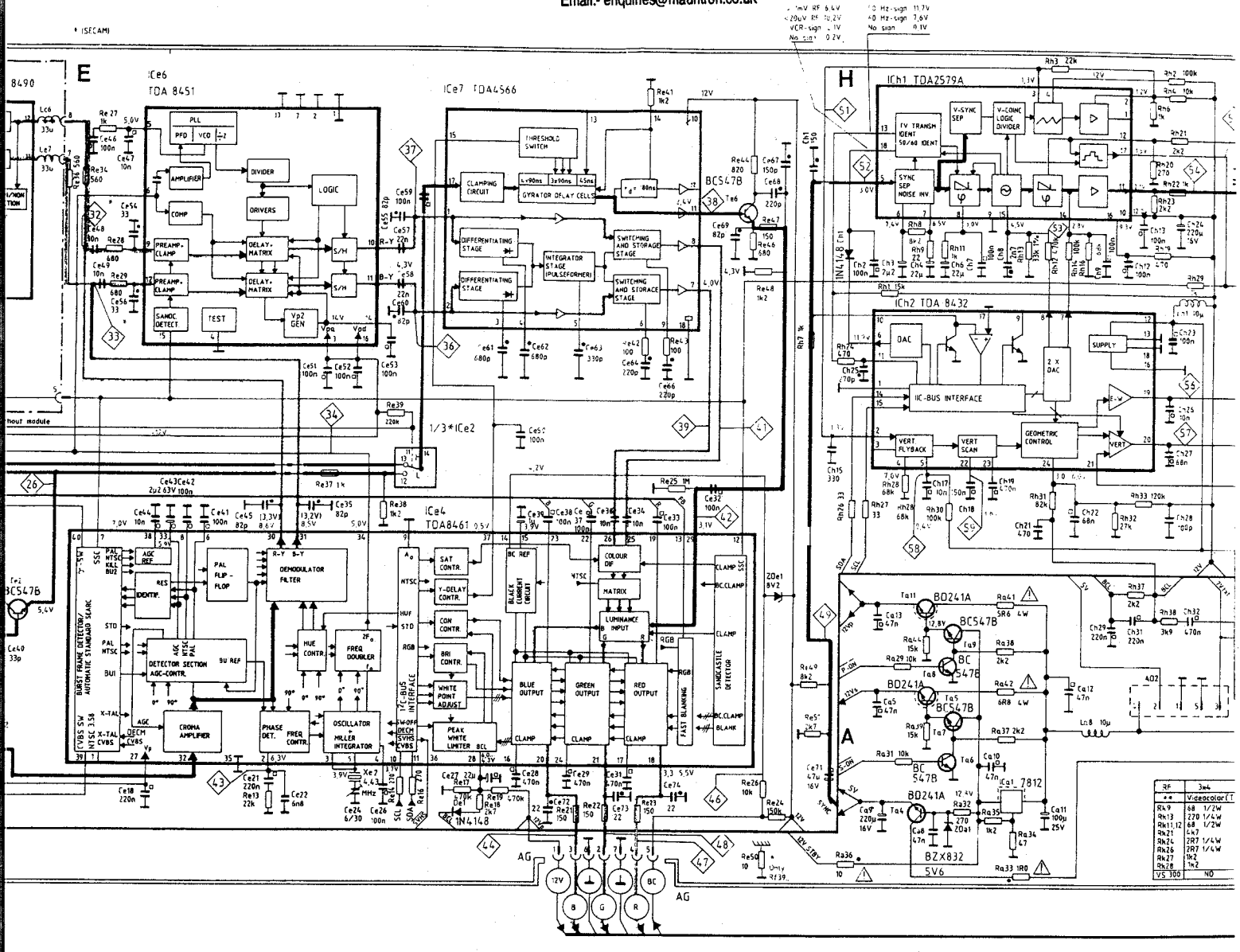
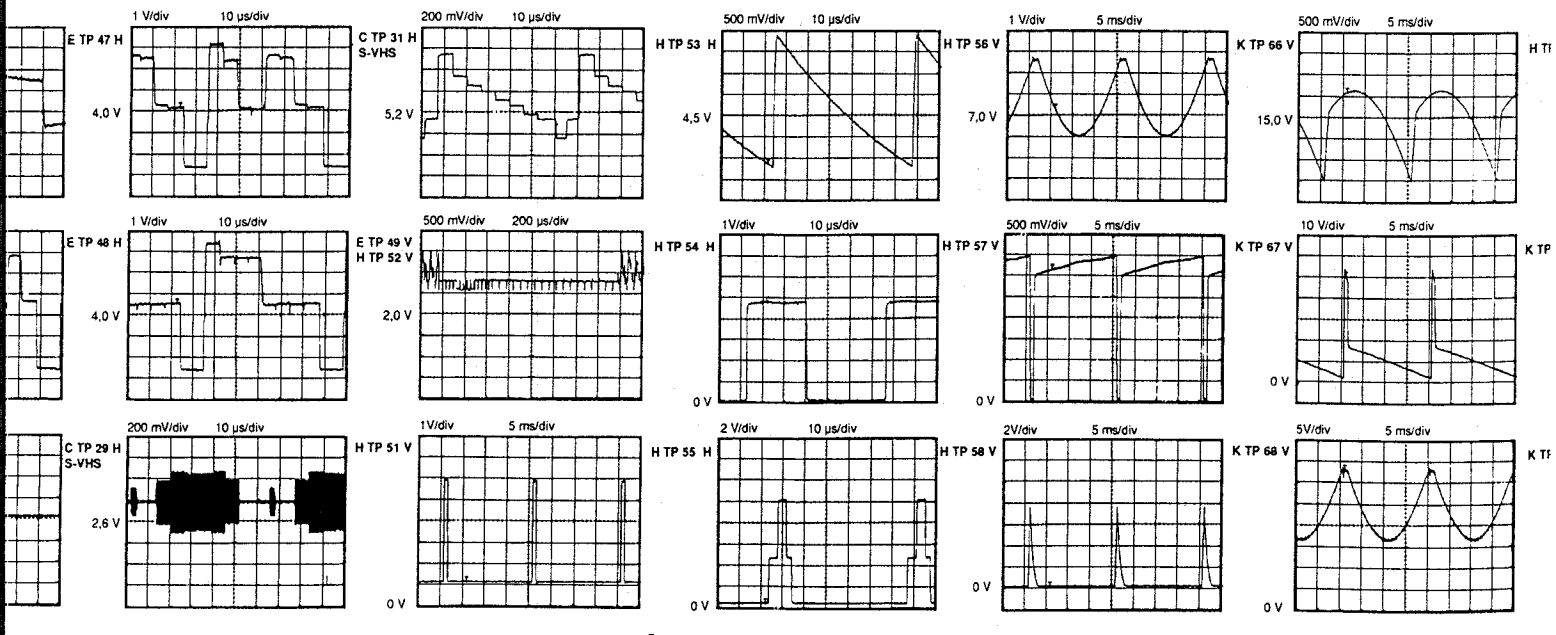
LUMINANCE AND CHROMINANCE

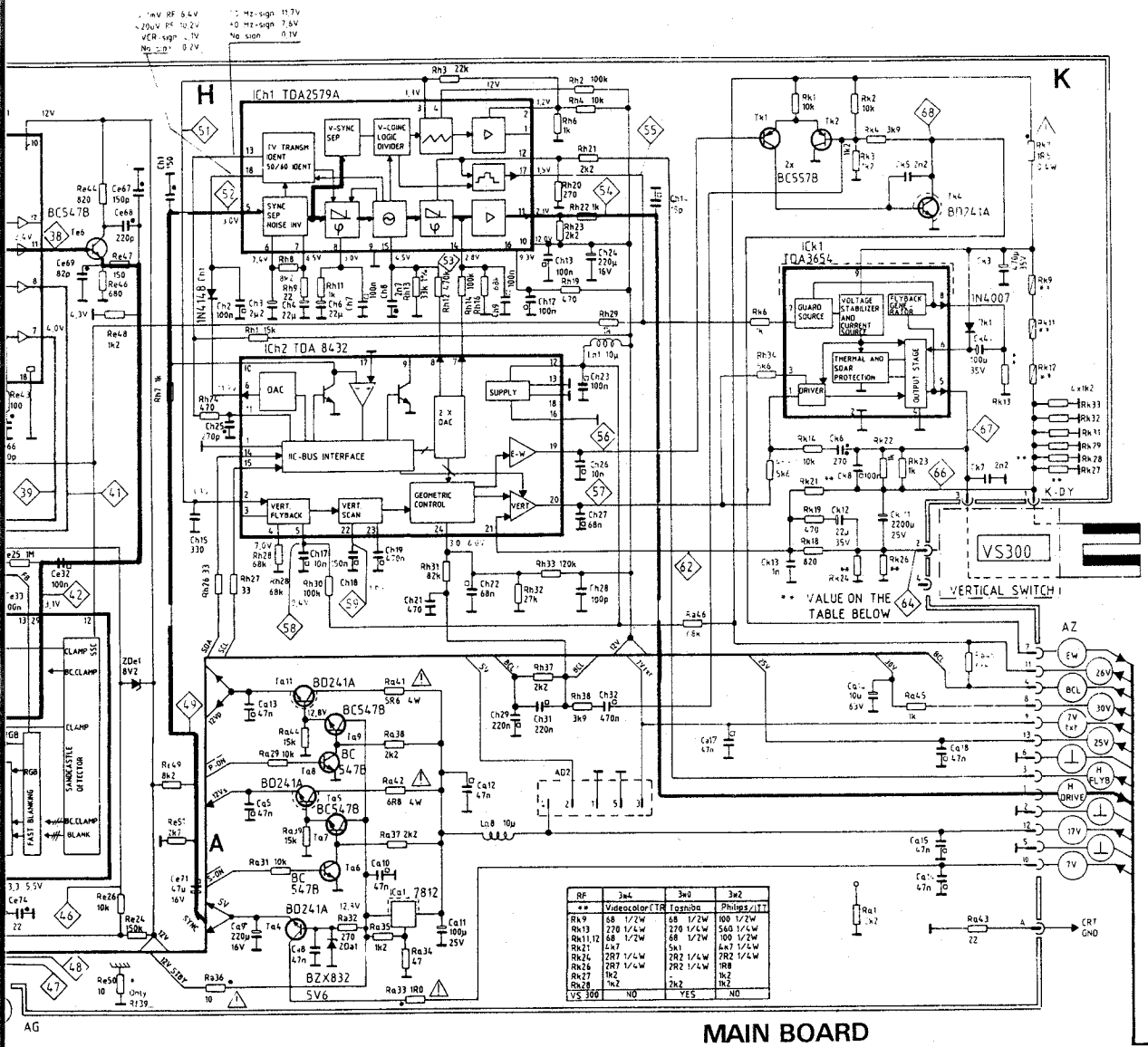
SYNC/ DEFLECTION PROCESSOR



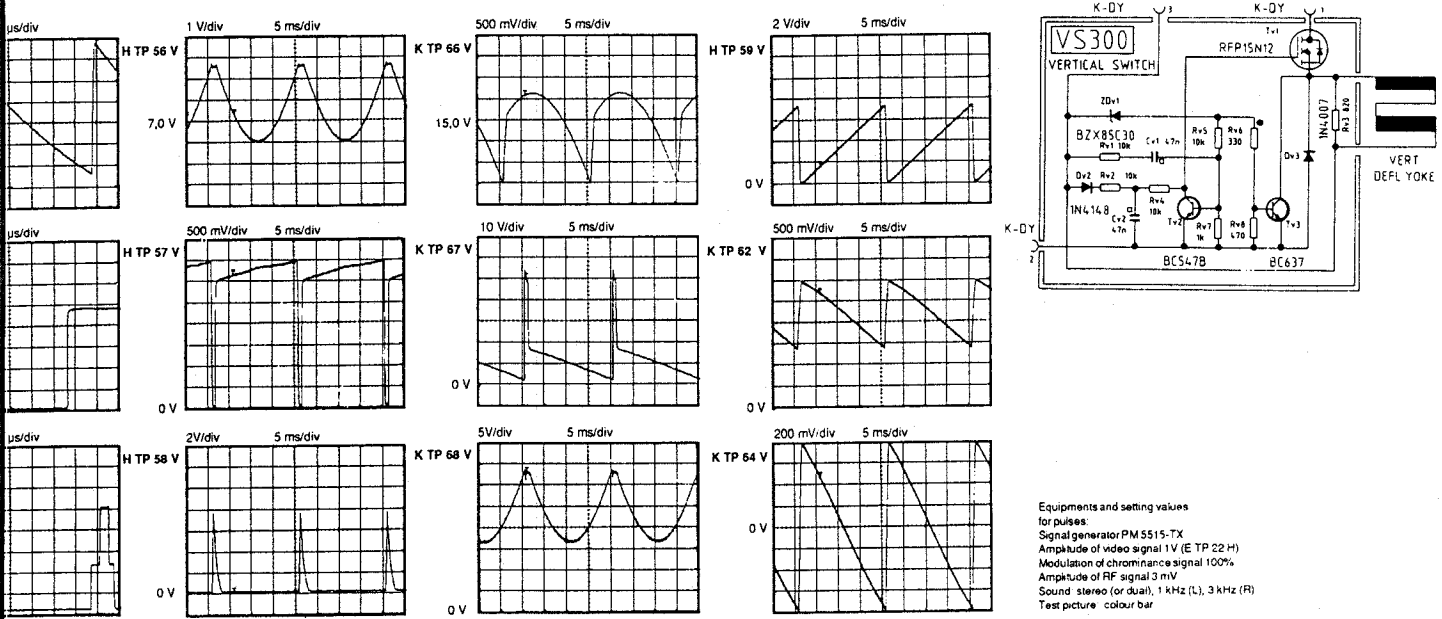


SYNC/ DEFLECTION PROCESSOR

VERT DEFLECTION



RF	3w4	3w0	3w2
**	Videocolor CTR	Toshiba	Philips/ITT
Rk9	68 1/2W	68 1/2W	100 1/2W
Rk13	270 1/4W	270 1/4W	560 1/4W
Rk11,12	68 1/2W	68 1/2W	100 1/2W
Rk21	4k7	5k1	4k7 1/4W
Rk24	2R7 1/4W	2R2 1/4W	2R2 1/4W
Rk26	2R7 1/4W	2R2 1/4W	1R8
Rk27	1k2	1k2	1k2
Rk28	1k2	2k2	1k2
VS 300	NO	YES	NO



Equipments and setting values for pulses:
Signal generator PM 5515-TX
Amplitude of video signal 1 V (E TP 22 H)
Modulation of chrominance signal 100%
Amplitude of RF signal 3 mV
Sound: stereo (or dual), 1 kHz (L), 3 kHz (R)
Test picture: colour bar